3-MOTOR 3-HEAD SYSTEM TAPE DECK

RT-2022
RT-2044

KU

<ART-174-0>

PIONEER®

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1. SPECIFICATIONS

System	
RT-2022	Transport Unit; RTU-11/2T (Transport with 2-track 2-channel head assemble unit) Amplifier Unit; TAU-11
RT-2044	Transport Unit; RTU-11/QT (Transport with 4-track 4-channel head assemble unit) Amplifier Unit; TAU-11 (2 sets)
Heads and Track	
RT-2022	Head assembly unit (JT-2022T): Plug-in type, 2-track 2-channel. 3-head system / Erase (Ferrite), Recording (Permalloy), Playback (Permalloy) heads
RT-2044	Head assembly unit (JT-2044T): Plug-in type, 4-track 4-channel. 3-head system / Erase (Ferrite), Recording (Permalloy), Playback (Permalloy) heads
Motors	3-motors, Capstan belt drive (with 100ϕmm flywheel). Capstan motor: 4/8-pole large size hysteresis synchronous motor x 1. Reel motor: 6-pole inner rotor induction motor x 2.
Acceptable Reel Size	10-1/2in (26cm), 7in (17cm)
Tape Speeds	38cm/s (15ips), 19cm/s (7-1/2ips), ±0.8%
High Speed Wind Times	10-1/2in (26cm) reel; 110 sec at 740m (2,400feet) tape 7in (17cm) reel; 90 sec at 370m (1,200feet) tape
Wow and Flutter	38cm/s (15ips); 0.04% WRMS (0.06% RMS) 19cm/s (7-1/2ips); 0.08% WRMS (0.09% RMS)
Equalization	NAB curve (38cm/s, 19cm/s), IEC curve (38cm/s, T=35μs) with tape equalization selector switch
Bias	125kHz FIX: reference tape (Fixed) VARIABLE: LOW: −40% – −8%* HIGH: −15% – +38%*

* Variable range of bias current against "FIX" position

Total Signal-to-Noise ratio	
RT-2022	More than 57dB More than 60dB at 38cm/s IEC position, over 5kHz
RT-2044	More than 55dB More than 58dB at 38cm/s IEC position, over 5kHz
Total Harmonic Distortion	No more than 0.8% (38cm/s) No more than 1.0% (19cm/s)
Frequency Response	30Hz to 28,000Hz ±3dB (38cm/s) 40Hz to 20,000Hz ±3dB (19cm/s)
Crosstalk (RT-2044 only)	More than 60dB (track interval)
Channel Separation	RT-2044; More than 53dB RT-2044; More than 50dB
Inputs (Sensitivity / Maximum allowable level / Input impedance)	
MIC	0.11mV – 100mV/27kΩ (with 20dB attenuator switch), 6ϕmm jack, Unbalance type, 2-channel
LINE	34mV – 25V/100kΩ, Pin jack (Rear panel) x2, 6ϕmm jack (Front panel), 2-channel

- Mixing control used for MIC and LINE input
- RT-2044 provides 2 sets of inputs terminals

RTU-11/2T used only	
LINE	100mV/13kΩ fixed, Pin jack (Rear panel) x2, 2-channel
RTU-11/QT used only	
LINE	100mV/13kΩ fixed, Pin jack (Rear panel) x2, 4-channel
Outputs (Reference level / Maximum level / Load impedance)	
LINE	450mV – 900mV/50kΩ, Pin jack (Rear panel) x 2 or 6ϕmm jack (Front panel), 2-channel
PHONES	64mV(0.5mW) – 133mV (2.2mW)8Ω, 6ϕmm stereo jack (Front panel)

- RT-2044 provides 2 sets of output terminals

RTU-11/2T used only	
LINE	100mV/40kΩ fixed, Pin jack (Rear panel), 2-channel
RTU-11/QT used only	
LINE	100mV/40kΩ fixed, Pin jack (Rear panel), 4-channel
Test Oscillator	Switchable (OFF/1kHz; for Bias adjustment /10kHz; for head azimuth adjustment etc.) with Test OSC signal output terminal (316mV/50kΩ fixed), 6ϕmm jack (Front panel).
Subfunctions	Tape selector switch [RTU-11] / Test oscillator built-in [RTU-11] / Cueing mechanism with lock button [RTU-11] / Remote control mechanism (separately available full remote control unit JT-211) [RTU-11] / Pause switch (Locking, also used as lag canceller) [RTU-11] / Wide scale level meter (−40dB to +6dB) [TAU-11] / Level memory marker (for input and output) [TAU-11] / Three parts of LINE INPUT and OUTPUT terminals [TAU-11] / Sync. recording monitor function with REC. mode selector [TAU-11] / Cable storage pocket [TAU-11] / Carrying handle and Unit protective covers [RTU-11, TAU-11] / RTU-11, TAU-11 Mounting clamps [RTU-11, TAU-11].
Furnished Parts	10-1/2in reel adaptors x 2 [RTU-11] / AC. Power cord x 1 [RTU-11] / 12-p dummy plug (used RTU-11 only) x 2 [RTU-11] / Head cleaning kit (Pioneer PP-203) x 1 [RTU-11] / Lock plug x 1 [RTU-11] / Pin plug cable x 2 [RTU-11] / Pin plug cable with color coding x 3 [TAU-11] / 12-p connector cable x 1 [TAU-11] / 6ϕmm plug cable x 2 [TAU-11] / Felt cushion x 2 [TAU-11] / Operating Instructions x 1

* RT-2044 provides 2 sets of TAU-11 furnished parts

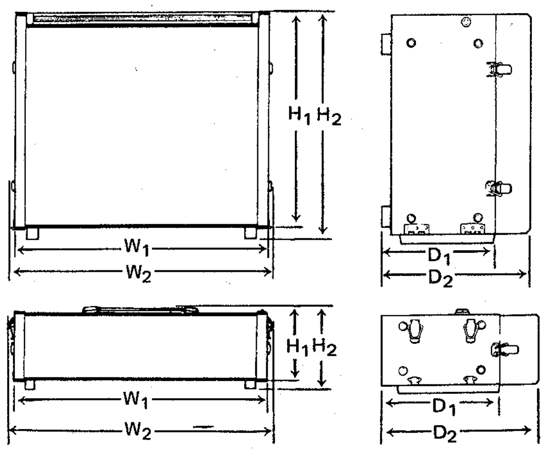
Power Requirements	AC 120V 60Hz
Power Consumption	155 watts, Max.
Weight	RTU-11 (Transport Unit): 23.3kg (51 lb 4 oz) TAU-11 (Amplifier Unit): 5.2kg (11 lb 5 oz)

Test Conditions:

1. Reference tape: Scotch #206
2. Reference recording level: meter 0dB level (NAB standard reference level)
3. Reference signal: 1,000Hz
4. Wow & Flutter: at 3,000Hz weighted RMS
5. Frequency response: measured at −10dB level (38cm/s)
   measured at −20dB level (19cm/s)
6. Signal-to-Noise ratio: measured at +6dB level
7. Total Harmonic Distortion: measured at reference recording level
8. Channel separation: measured at reference recording level
9. Sensitivity: Input level (mV) for reference recording measured with input (recording) level control set at maximum position.
10. Maximum allowable input level: measured at the point where the output signal wave is clipped while gradually turning the input control.
11. Reference output level: meter 0dB level.
12. Maximum output (playback) level: Output level to reference recording level, measured with output (playback) level control set at maximum position.

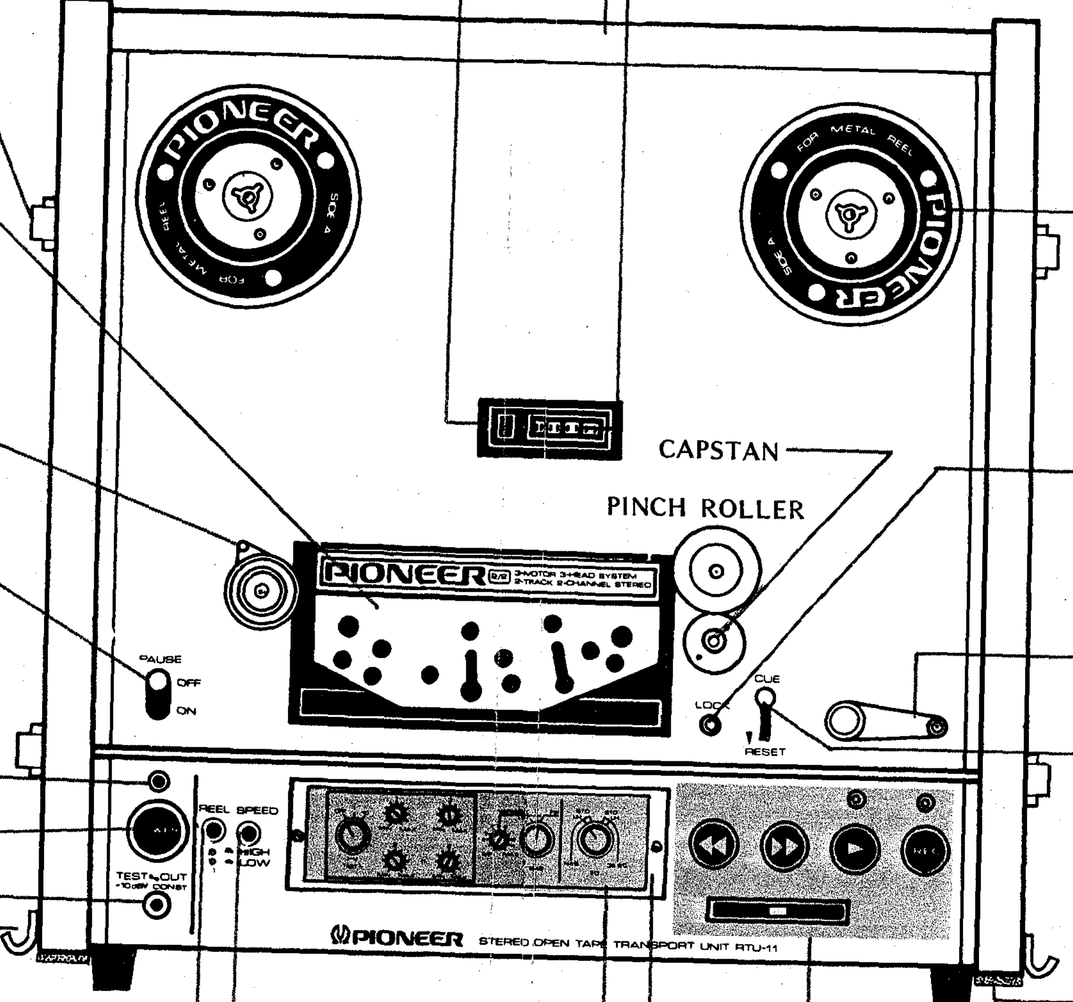
Dimensions	RTU-11 393(H_1) x 440(W_1) x 207(D_1)mm 15-1/2 x 17-5/16 x 8-3/16 in 411(H_2) x 460(W_2) x 274(D_2)mm 16-3/16 x 18-1/8 x 10-13/16 in TAU-11 123(H_1) x 440(W_1) x 207(D_1)mm 4-13/16 x 17-5/16 x 8-3/16 in 141(H_2) x 460(W_2) x 274(D_2)mm 5-9/16 x 18-1/8 x 10-13/16 in

NOTE:
Specifications and the design subject to possible modification without notice due to improvements.



2. TRANSPORT UNIT RTU-11 OPERATING

2.1 FRONT PANEL



COVER MOUNTING CATCHES
The protective cover should be fitted whenever the tape deck is to be transported or left out of use for a period of time. The cover will protect the front of the unit from dust and physical damage.

TAPE HEAD ASSEMBLY
Transport unit RTU-11/2T is equipped with 2-track 2-channel head assembly JT-2022T, transport unit RTU-11/QT with 4-track 4-channel head assembly JT-2044T. Either tape head assembly may be purchased separately and exchanged with the one fitted as original equipment.

GUIDE ROLLER ARM
While tape is being threaded, arm is locked to the left. After tape is threaded, release the lock.

PAUSE SWITCH
Used to momentarily stop tape motion. If switch is placed in ON position during recording or playback, tape transport only will be stopped. When switch is returned to the OFF position, tape motion will resume. Pause switch does not function during fast forward or rewind.

POWER INDICATOR LAMP
Indicates that AC power is ON.

POWER SWITCH
Pushing this switch one time will simultaneously turn on transport unit and amplifier unit TAU-11. Pushing switch a second time will turn power OFF.

OSC OUTPUT JACK

MOUNTING HOOKS
Used when transport unit is mounted on top of amplifier unit TAU-11. There are two pairs of hooks on each side panel, the hooks of each pair spaced 16mm (6/10in.) apart. Maximum stability is obtained when the transport unit is mounted so that its front panel is not even with the front panel of the amplifier unit, but slightly to the rear. In this case the latches of the amplifier unit will engage the forward hook of each pair of hooks on the transport unit.

COUNTER RESET BUTTON
Pushing this button will reset the tape counter to "0000".

CARRYING HANDLE
Convenient for use when transporting tape deck.

TAPE COUNTER
Enables user to locate starting point, etc., of recording.

CAPSTAN

PINCH ROLLER

REEL SWITCH
Adjusts tape tension in accordance with reel diameter. For 7 inch reels push button in; for 10 inch reels release button by pushing it in a second time.
NOTES:
1. *Right and left reels must be of same size.*
2. *Do not use reels smaller than 5 inches in diameter.*

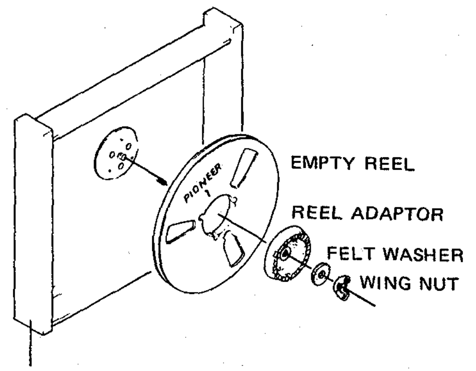
TAPE SPEED SELECTOR
Sets speed at which tape is played.
38cm/s (15ips): Pushbutton released (HIGH)
19cm/s (7-1/2ips): Pushbutton depressed (LOW)

TAPE FUNCTION BUTTONS

PROTECTIVE COVER FOR ADJUSTMENT CONTROLS
When bias or equalization adjustments are to be made, cover is removed by undoing screws.

EQ, BIAS CONTROLS

REEL BASE
The height of the reel base can be adjusted.



When tape deck is transported for live recording, etc., the reels may be stored inside the tape deck cover as shown in illustration.

CUE LOCK BUTTON
If button is depressed while cue lever is held down, and cue lever then released, the cue lever will be locked in the downward position. To unlock the cue lever, push downward toward RESET.

TENSION ARM (Shut-off incorporated)
Prevents irregularities in tape tension during tape transport and takes up slack which occurs when function buttons are actuated. The shut-off switch feature stops the tape transport system automatically should the tape go slack, break, or run out.

CUE LEVER
Pressing down the CUE lever during fast forward or rewind will move the tape shifter and pinch roller so that the tape can approach the heads. This permits user to monitor tape sound in these modes, which is helpful in editing, etc., of the tape. If the lever is lowered when the unit is stopped, tape sound can be monitored by turning the reels by hand.

FELT CUSHION
When the tape transport unit is to be mounted on top of the amplifier unit TAU-11, remove the backing from the felt cushion strips supplied with amp unit and apply felt cushion to tape deck as shown in illustration.

FOOT
Should be removed when tape transport unit is mounted on top of amplifier unit (TAU-11).

TEST OSC LEVEL CONTROLS

For adjusting level of TEST OSC signal. Signal level increases with clockwise rotation of controls. While there are four separate controls, only nos. 1 and 3 are used for model RT-2022 (2-track 2-channel). With RT-2044, all four controls are used. When a plug connector is inserted in the OSC output jack, the test signal will no longer be supplied to the tape deck circuit.

TEST OSC SELECTOR

The built-in test signal oscillator can be set to either 1kHz or 10kHz. 1kHz is used for bias adjustment, 10kHz for head and frequency response adjustments. During normal operation the selector must set in the OFF position.

POWER SWITCH

EQ SELECTOR

Selects recording equalization characteristics according to type of tape used. Playback equalization should be set at the same value used for recording the particular tape. For a tape speed of 38cm/s (15ips), it is possible to select either NAB (50μs) or IEC (35μs) standard equalization. In this case, equalization used in playback and recording should be the same.

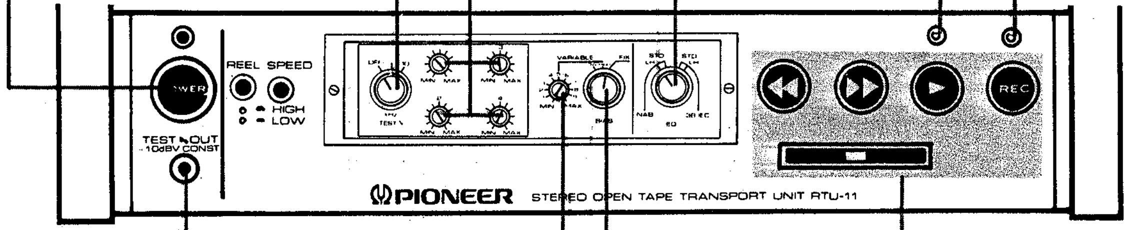
For further information, see page 22, "EQ and BIAS selector switches".

"PLAY" INDICATOR LAMP

When this lamp is lit, it indicates that (▶) function has been pushed.

RECORD INDICATOR LAMP (RED)

When this lamp is lit, unit is in record mode.



OSC OUTPUT JACK

The test oscillator signal can be tapped for adjustment and testing of other tape decks and amplifiers by use of the accessory 6ϕmm. plug connector. Test signal frequency is controlled by the TEST OSC selector.

BIAS ADJUSTMENT CONTROL

For adjustment of bias current according to characteristics of particular recording tape used. For this purpose, BIAS selector should be set at either LOW or HIGH on the VARIABLE side.

BIAS SELECTOR

Set on FIX or VARIABLE according to type of recording tape used. FIX provides a standard bias current used for SCOTCH 206 low noise tape. VARIABLE is used for BIAS adjustment with other kinds of tape.

FUNCTION BUTTONS

(◀◀) REWIND:	Causes tape to be wound at high speed from right to left reel.
(▶▶) FAST-FORWARD:	Causes tape to be wound at high speed from left to right reel.
(▶) PLAY:	For tape playback, pushing this button will cause tape to be transported from left to right reel at a preset speed. For recording, this and REC button are depressed simultaneously.
(REC) RECORD:	To record, push this button and play (▶) button simultaneously.
(■) STOP:	Stops tape from any function and returns unit to neutral state.

NOTE:
With this tape deck, changing from any of the functions to any other function is done without first depressing the stop(■)button. If, for example, Play(▶)button is pushed while unit is in Fast forward or Rewind, tape will automatically come to a complete stop, and after a short pause, begin the Play mode. This feature permits rapid manipulation of tape functions, while eliminating the possibility of tape being damaged.

2.2 REAR PANEL

REMOTE CONTROL SELECTOR

For remote control operation selector should be in REMOTE position. If remote control is not being used, place selector in NORMAL position.

REMOTE CONTROL CONNECTOR

With use of remote control unit JT-211 which may be purchased separately, remote control of Play, Record, Fast-forward, Rewind, Stop, and Pause functions is possible.

AC POWER IN

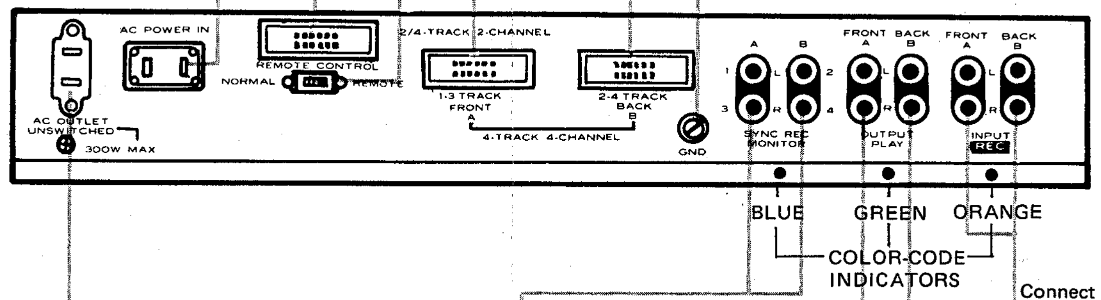
Accessory AC power cord is connected here.

CONNECTOR (4-track 4-channel)

1-3 TRACK FRONT A: (2/4-TRACK 2-CHANNEL)	Connection made using accessory cord supplied with tape deck. For 2-channel stereo tracks 1 and 3 are used.
2-4 TRACK BACK B:	For 4-channel stereo tape deck RT-2044 a second amplifier is connected here using the accessory cord. In this case, tracks 2 and 4 are used.

GND TERMINAL

If there is hum or externally induced noise, connect to GND terminal of amplifier, or directly to earth.



Connect using pin connectors of corresponding color.

AC OUTLET

An AC power outlet (maximum 300W) which may be used as power source for other tape decks, amplifiers, etc.

SYNC REC MONITOR (A, B)

When the REC MODE selector of amplifier unit TAU-11 is set on SYNC, the recording head acts as both a recording and playback head. The playback signal from this head may be monitored from this terminal by connecting A side with the SYNC REC MONITOR terminals of amplifier unit TAU-11. With 4-channel stereo tape deck RT-2044, B side is connected to the second amplifier unit TAU-11.

INPUT REC TERMINALS (FRONT A, BACK B)

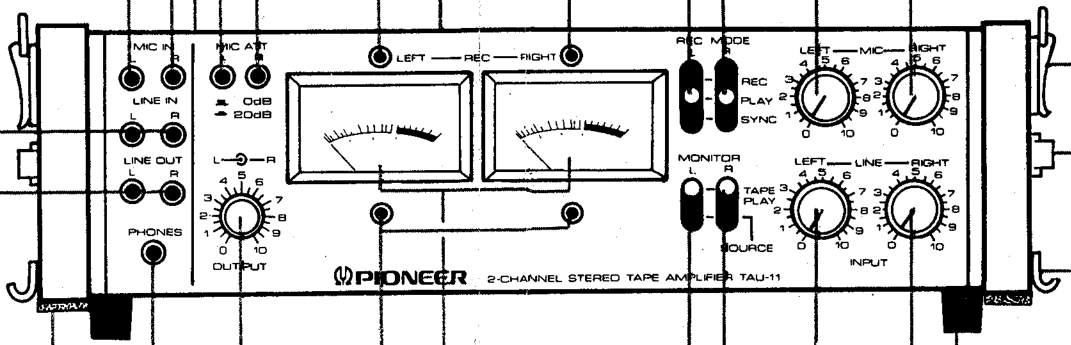
Recording input terminals of transport unit RTU-11. Connect OUTPUT REC (TO TRANSPORT) terminals on rear panel of amplifier unit TAU-11 to FRONT A side. For 4-channel stereo tape deck RT-2044 the second amplifier unit TAU-11 is connected to BACK B side.

OUTPUT PLAY TERMINALS (FRONT A, BACK B)

Playback output terminals of transport unit RTU-11. Connect INPUT PLAY (TO TRANSPORT) terminals on rear panel of amplifier unit TAU-11 to FRONT A side. For 4-channel stereo tape deck RT-2044, second amplifier unit TAU-11 is connected to BACK B side.

3. AMPLIFIER UNIT TAU-11 OPERATION

3.1 FRONT PANEL



CABLE STORAGE COMPARTMENT

Connecting cables, the cleaning kit, and other small items can be stored here.

MIC IN JACKS

Input terminal for microphone recording. L and R channels may be used independently. Accept standard phone plug. Microphones used may be either low (600 ohms) or high (10kohms–50kohms) impedance type.

LINE IN (L, R) JACKS

Recording input terminals. Connected to amplifier and other output signal sources by use of standard phone plug. When these terminals are used, LINE IN REC terminals on rear panel (for program source) are disconnected.

LINE OUT (L, R) JACKS

Playback output terminals. Location on front panel facilitates connection with input terminals of other amplifiers. For sound-on-sound recording L side (or R side) is connected to R side (L side) LINE IN jack. Jacks accept standard phone plug.

FELT CUSHION

When RT-2044 the second amp unit (TAU-11) is to be mounted on top of the amplifier unit TAU-11, remove the backing from the felt cushion strips supplied with amp unit and apply felt cushion to tape deck as shown in illustration.

HEADPHONE JACK (PHONES)

Output terminal for stereo headphones. Headphones are connected when it is desired to monitor recording or playback states.

CARRYING HANDLE

Useful when transporting unit.

MICROPHONE ATTENUATOR SWITCHES (MIC ATT)

When button is depressed microphone input is decreased by 20dB. Useful for high volume program sources whose output signal may be sufficiently powerful to cause distortion in recording, and in cases where MIC recording level control cannot provide sufficiently fine adjustment.

METER ZERO ADJUSTMENT SCREW

OUTPUT LEVEL CONTROLS (OUTPUT)

Control output level of LINE OUT jacks on front panel, LINE OUT PLAY terminal on rear panel, and PHONES terminal. Output level (indicated on level meter) increases with clockwise rotation of control. The outer ring controls R-channel, the inner ring the L-channel. Output level control is equipped with a click-stop at the optimum level setting for standard recording tape (Ampex) which is 450mV at 0dB. Under normal circumstances the control is set in this position.

LEVEL METERS

Indicate recording and playback levels. When MONITOR switch is set on SOURCE, meters indicate level of input signals. If MONITOR switch is set on TAPE PLAY meters indicate level of output signals. When meters indicate 0dB, output level is 450mV (−7dBv).

RECORDING INDICATOR LAMP (RED)

When this lamp is lit, unit is in recording mode.

REC MODE SELECTORS

REC:	Position for recording.
PLAY:	Position for playback.
SYNC:	Position of selector when sync recording monitor is used. In this setting, one of the channels of the recording head functions as a signal pick-up. Detailed information will be found on page 28, "Sync recording monitor"

L and R channels can be controlled independently with this selector.

LINE RECORDING LEVEL CONTROLS

Control recording input level from LINE IN REC terminals on rear panel, and INPUT IN jacks on front panel. Level increases as controls are rotated clockwise. LEFT control governs left channel, RIGHT control the right channel.

MONITOR SELECTORS

Used when recording state is monitored.

TAPE PLAY:	For monitoring signal recorded on tape.
SOURCE:	For monitoring signal before it is recorded on tape.

If during recording MONITOR selector is switched alternately to SOURCE and TAPE PLAY, it is possible to compare signal before and after recording. L selector governs monitoring of left channel, R side the right channel.

MICROPHONE RECORDING LEVEL CONTROLS (MIC)

When recording with microphone, provide independent control of recording input level for LEFT and RIGHT channels. Level increases with clockwise rotation of controls.

CONNECTING LATCHES

Used when transport unit RTU-11 is mounted on top of amplifier unit.

COVER MOUNTING HOOKS

Fitting the front cover when the unit is transported or out of use for a period of time will protect it from damage caused by dust and dirt, and rough handling.

MOUNTING HOOKS

Used when RT-2044 the second amp unit (TAU-11) is mounted on top of amplifier unit TAU-11.

LEGS

Should be removed when RT-2044 the second amp unit (TAU-11) is mounted on top of amplifier unit (TAU-11).

3.2 REAR PANEL

CONNECTOR

Connected to 2/4 TRACK 2-CHANNEL connector of transport unit. Second amplifier unit of the 4-channel tape deck RT-2044 is connected with 2-4 TRACK BACK B of the transport unit.

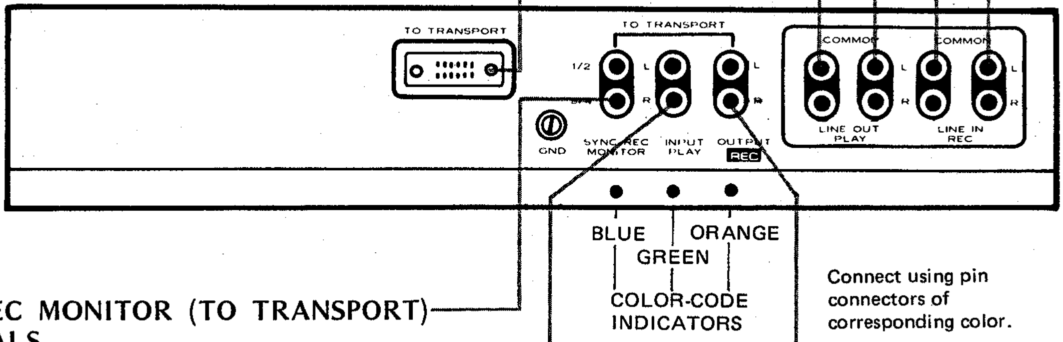
NOTE:
With 4-channel stereo tape deck RT-2044, the amplifier used for the front channel is connected to the CH.1, CH.3 side, and the rear channel amplifier to CH.2, CH.4 side.

LINE OUT (PLAY) TERMINALS

Playback output terminals connected to TAPE MONITOR or PLAY BACK terminals of stereo receiver (or stereo amplifier) using phono cable provided.

LINE IN (REC) TERMINALS

Recording input terminals. Connected to recording output (TAPE REC) terminals of stereo receiver (or stereo amplifier) using phono cable provided.
If a program source is connected to LINE IN on front panel, the signal coming from these terminals will be cut off.



Connect using pin connectors of corresponding color.

SYNC REC MONITOR (TO TRANSPORT) TERMINALS

Connected to SYNC REC MONITOR (A) on the rear panel of transport unit RTU-11 using the connecting cord provided. Second amplifier of 4-channel stereo tape deck RT-2044 is connected to SYNC REC MONITOR (B). When the recording head functions as a playback head, its output signal is tapped at these terminals.

INPUT PLAY (TO TRANSPORT) TERMINALS

Connected with OUTPUT PLAY (FRONT A) terminals on rear panel of transport unit RTU-11 using phono cables provided. Second amplifier unit of 4-channel stereo tape deck RT-2044 is connected to OUTPUT PLAY (BACK B) terminals.

OUTPUT REC (TO TRANSPORT) TERMINALS

Connected with INPUT REC (FRONT A) terminals on rear panel of transport unit RTU-11 using phono cable provided. Second amplifier unit of 4-channel stereo tape deck RT-2044 is connected with INPUT REC (BACK B) terminals.

USE OF INPUT TERMINALS

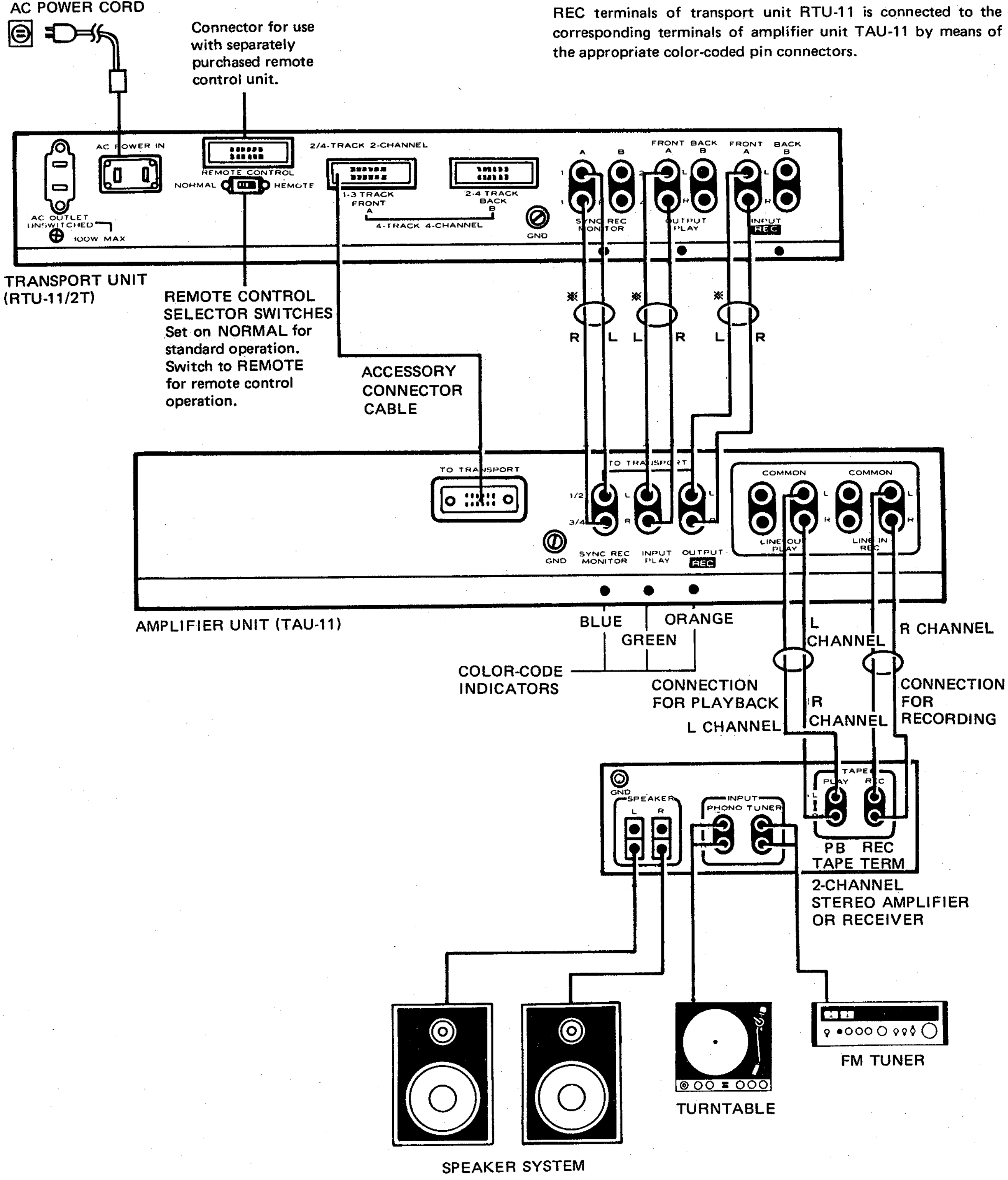
The two pairs of LINE IN REC terminals are wired in parallel. If one pair is connected to the stereo amplifier and the other pair to another tape deck (open reel or cassette), the program source output can be recorded at the same time in this and the other tape deck. If a program source is connected to the LINE IN jacks on the front panel, the signal coming from the LINE IN REC terminals on the rear panels will be cut off.

USE OF OUTPUT TERMINALS

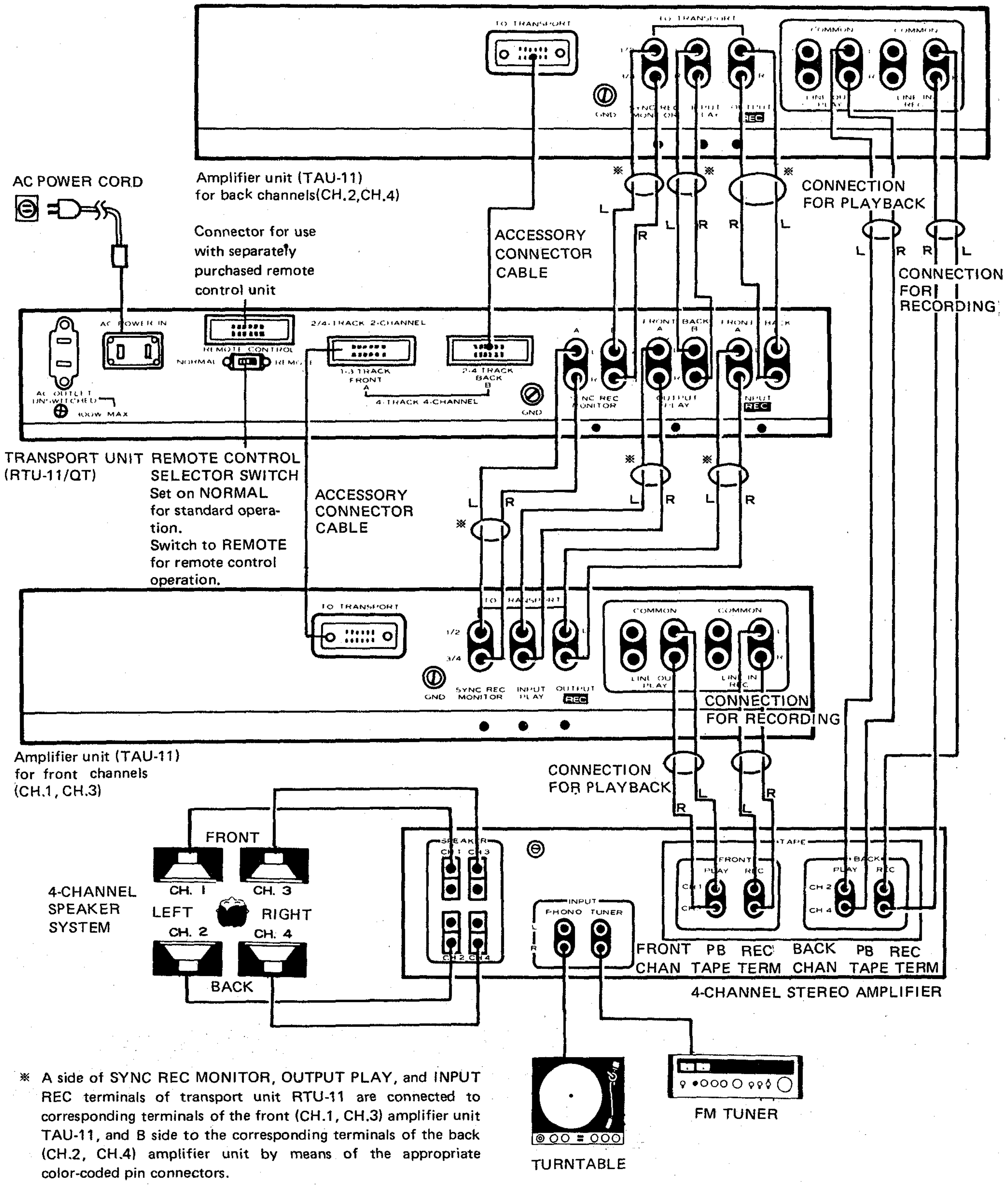
Amplifier unit TAU-11 is equipped with two pairs of LINE OUT PLAY terminals (rear panel), and LINE OUT jacks (front panel), a total of 3 pairs of output terminals. One pair of LINE OUT PLAY terminals is connected to the playback terminals of the stereo amplifier. If one of the remaining pairs is connected to another tape deck, at the same time the stereo tape deck system is playing back a program source, a duplicate tape can be made on the other tape deck.

4. CONNECTION FOR RT-2022 SYSTEM

※ A side of SYNC REC MONITOR, OUTPUT PLAY, and INPUT REC terminals of transport unit RTU-11 is connected to the corresponding terminals of amplifier unit TAU-11 by means of the appropriate color-coded pin connectors.


AC POWER CORD
Connector for use with separately purchased remote control unit.
AC POWER IN
REMOTE CONTROL
NORMAL
REMOTE
2/4-TRACK 2-CHANNEL
1-3 TRACK FRONT A
2-4 TRACK BACK B
4-TRACK 4-CHANNEL
AC OUTLET UNSWITCHED
100W MAX
GND
A
B
FRONT A
BACK B
FRONT A
BACK B
1
3
2
4
L
R
SYNC REC MONITOR
OUTPUT PLAY
INPUT REC
TRANSPORT UNIT (RTU-11/2T)
REMOTE CONTROL SELECTOR SWITCHES
Set on NORMAL for standard operation. Switch to REMOTE for remote control operation.
ACCESSORY CONNECTOR CABLE
※
※
※
R
L
L
R
L
R
TO TRANSPORT
TO TRANSPORT
1/2
3/4
GND
SYNC REC MONITOR
INPUT PLAY
OUTPUT REC
COMMON
COMMON
LINE OUT PLAY
LINE IN REC
AMPLIFIER UNIT (TAU-11)
BLUE
GREEN
ORANGE
COLOR-CODE INDICATORS
L CHANNEL
R CHANNEL
CONNECTION FOR PLAYBACK
R CHANNEL
L CHANNEL
CONNECTION FOR RECORDING
GND
SPEAKER
L
R
INPUT
PHONO
TUNER
TAPE
PLAY
REC
PB
REC
TAPE TERM
2-CHANNEL STEREO AMPLIFIER OR RECEIVER
SPEAKER SYSTEM
TURNTABLE
FM TUNER

5. CONNECTION FOR RT-2044 SYSTEM


TO TRANSPORT
SYNC REC MONITOR
INPUT PLAY
OUTPUT REC
COMMON
LINE OUT PLAY
LINE IN REC
GND
AC POWER CORD
Amplifier unit (TAU-11) for back channels(CH.2,CH.4)
Connector for use with separately purchased remote control unit
ACCESSORY CONNECTOR CABLE
CONNECTION FOR PLAYBACK
CONNECTION FOR RECORDING
L
R
AC POWER IN
REMOTE CONTROL
NORMAL
REMOTE
2/4-TRACK 2-CHANNEL
1-3 TRACK FRONT A
2-4 TRACK BACK B
4-TRACK 4-CHANNEL
AC OUTLET UNSWITCHED
100W MAX
FRONT A
BACK B
OUTPUT PLAY
INPUT REC
TRANSPORT UNIT (RTU-11/QT)
REMOTE CONTROL SELECTOR SWITCH
Set on NORMAL for standard operation.
Switch to REMOTE for remote control operation.
ACCESSORY CONNECTOR CABLE
※
Amplifier unit (TAU-11) for front channels (CH.1, CH.3)
CONNECTION FOR RECORDING
CONNECTION FOR PLAYBACK
FRONT
CH. 1
CH. 3
4-CHANNEL SPEAKER SYSTEM
LEFT
RIGHT
CH. 2
CH. 4
BACK
SPEAKER
INPUT
PHONO
TUNER
TAPE
FRONT
BACK
PLAY
REC
FRONT CHAN
PB TAPE
REC TERM
BACK CHAN
PB TAPE
REC TERM
4-CHANNEL STEREO AMPLIFIER
TURNTABLE
FM TUNER

※ A side of SYNC REC MONITOR, OUTPUT PLAY, and INPUT REC terminals of transport unit RTU-11 are connected to corresponding terminals of the front (CH.1, CH.3) amplifier unit TAU-11, and B side to the corresponding terminals of the back (CH.2, CH.4) amplifier unit by means of the appropriate color-coded pin connectors.

6. DISASSEMBLY

6.1 BACK COVER (Fig. 1)

1. Take out screws①–④and loosen screws⑤–⑦to remove back cover A.
2. Take out screws⑧–⑬ to remove back cover B.

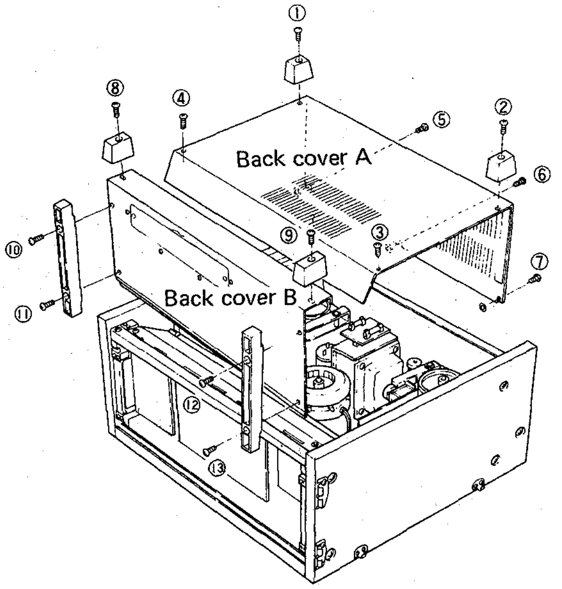

①
⑧
④
⑤
②
Back cover A
⑥
⑩
⑨
③
⑦
⑪
Back cover B
⑫
⑬

Fig. 1

6.2 SIDE PANELS (Fig. 2)

Loosen screws①and②about③turns, then take out screws③– ⑩ to remove side panels.

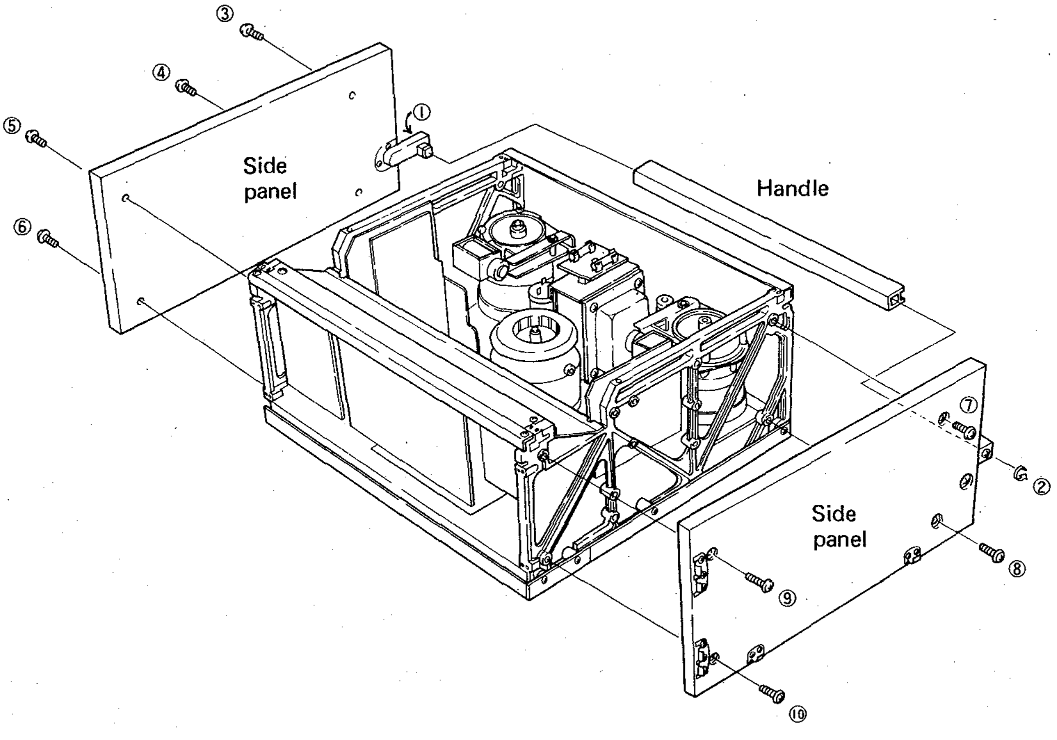

③
④
①
⑤
Side panel
Handle
⑥
⑦
②
Side panel
⑧
⑨
⑩

Fig. 2

6.3 CONTROL PANEL (Fig. 3)

1. Take out screws①–④to remove amp panel.

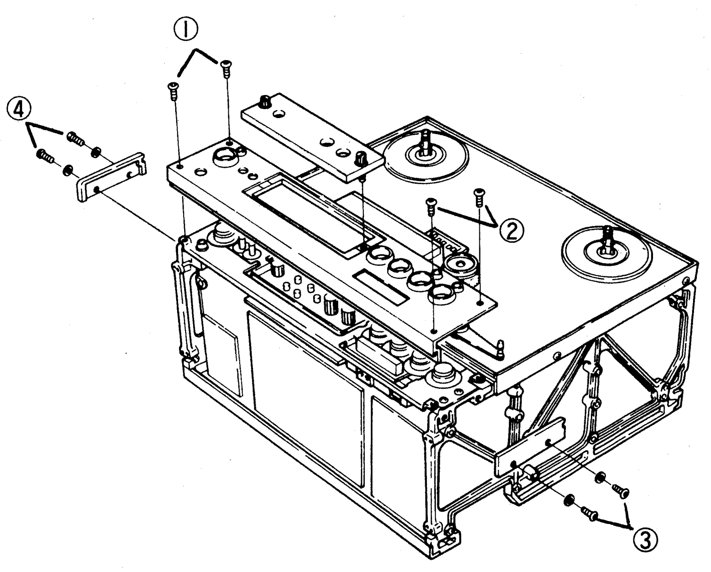


Fig. 3

6.4 MECHANICAL PANEL (Fig. 4)

1. Take out screws ① and ② to remove head unit (JT-2022T or JT-2044).
2. Pinch roller can be removed by taking out screw ③.
3. Take out screws④–⑥to remove center base.
4. Take out screws⑦and⑧to remove reel hubs.
5. Take out screws⑨– ⑪ to remove guide rollers.
6. Take out screw ⑫ and turn cap to remove tension arm.
7. Pull off PUASE knob, take out screws ⑬ – ㉑ to remove decorative frame. Mechanical panel can then be removed.

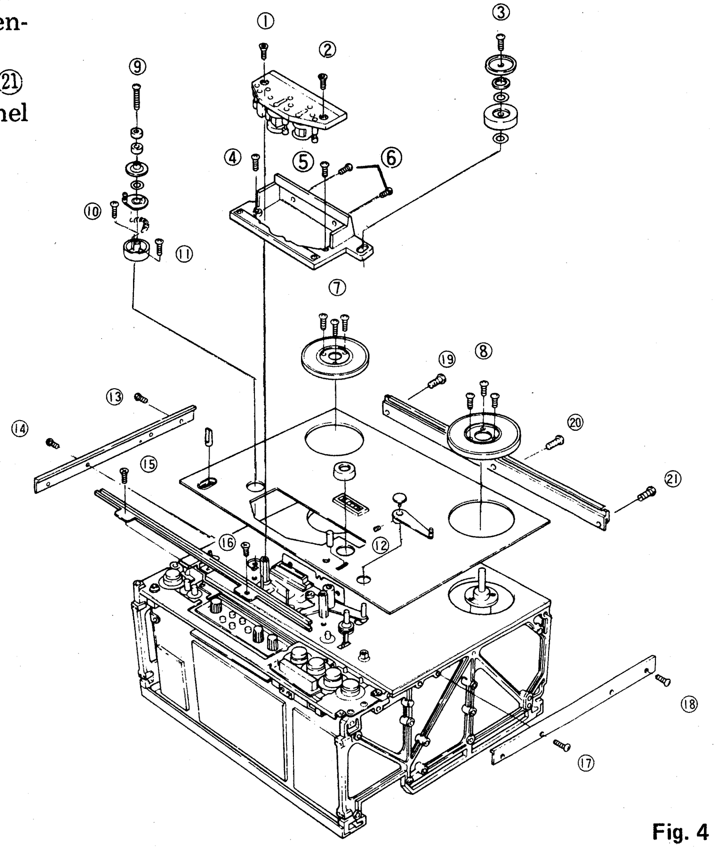


Fig. 4

6.5 TAU-11 (Fig. 5)

1. Remove all knobs from front panel and take out screws①–④ (Fig. 5-a)
2. Remove screws⑤– ⑫ from side panels.
3. Take out screws ⑬ – ⑲ and loosen screws ⑳ – ㉓, then bottom plate can be removed together with feet.
4. Take out screws ㉙ – ㉞ and loosen screws ㉔ – ㉗ to remove cover.

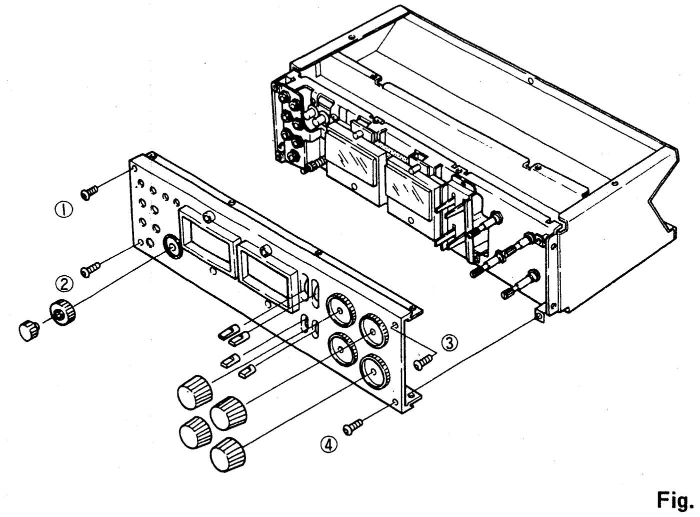


Fig. 5-a

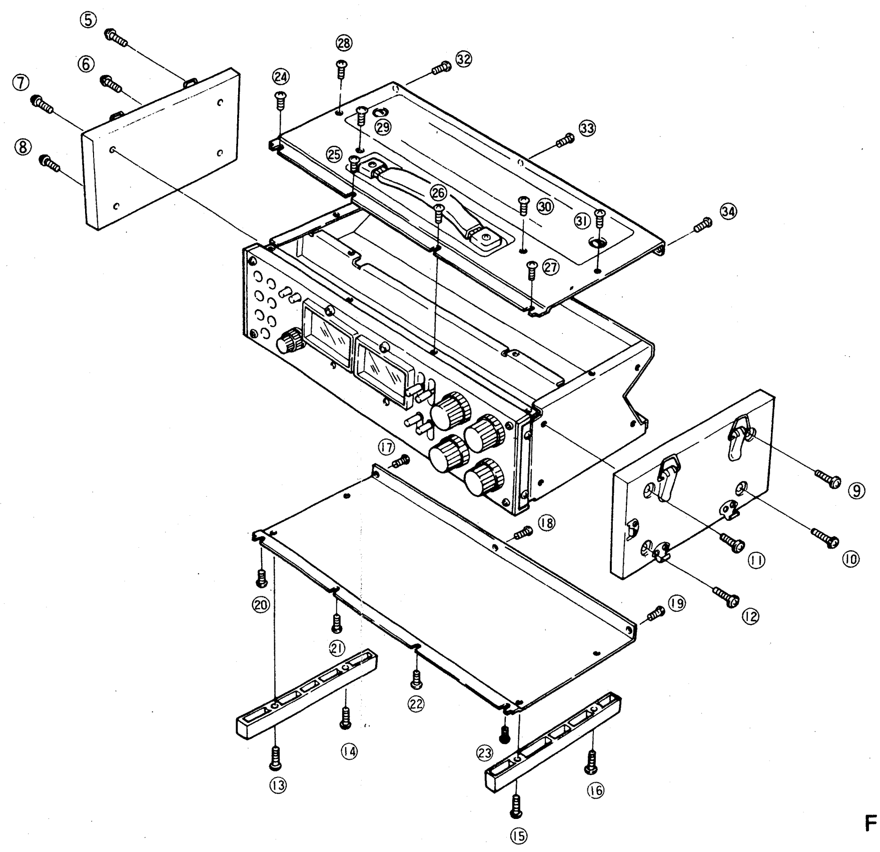
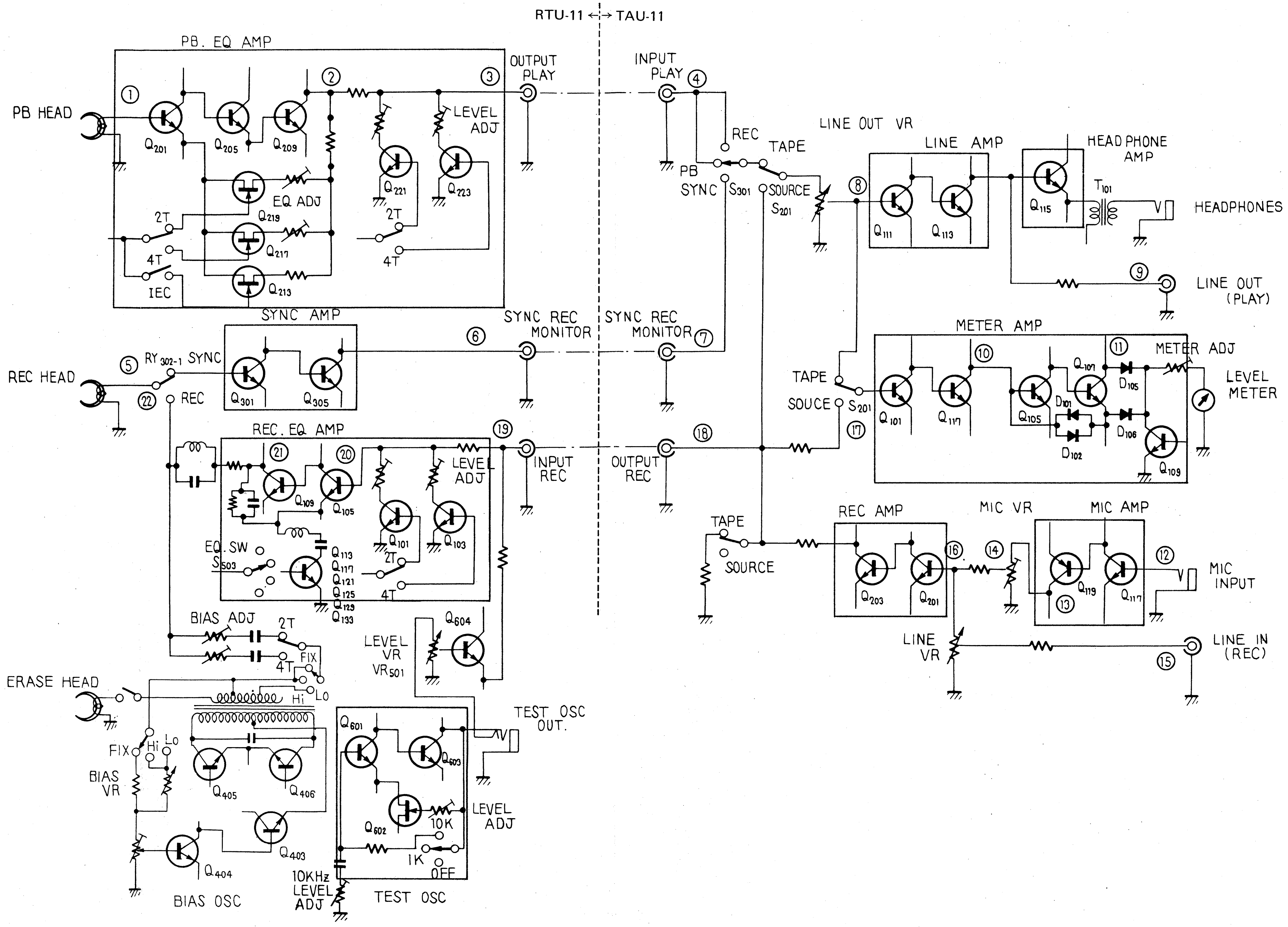


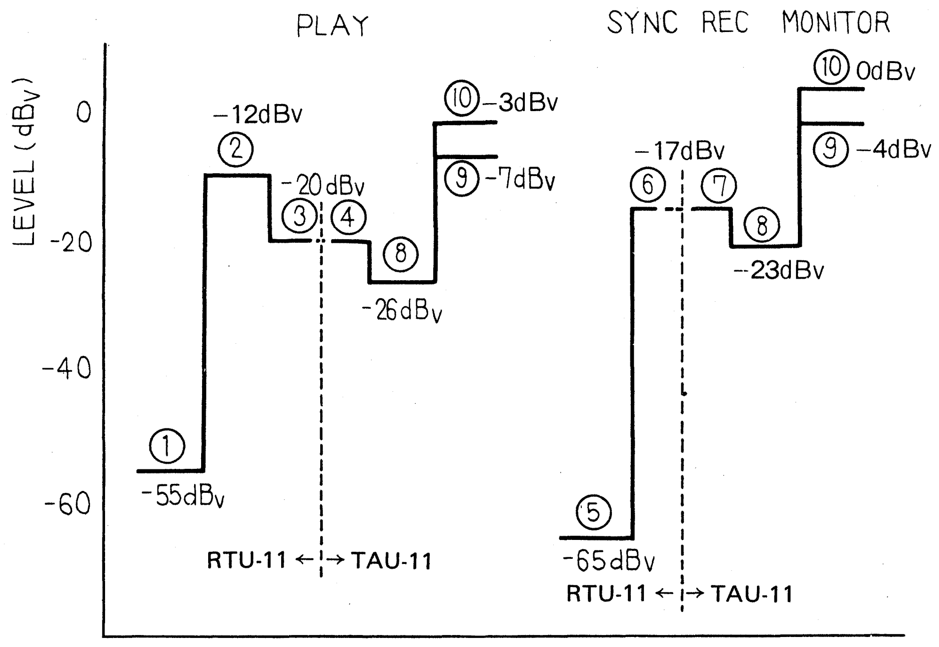
Fig. 5-b

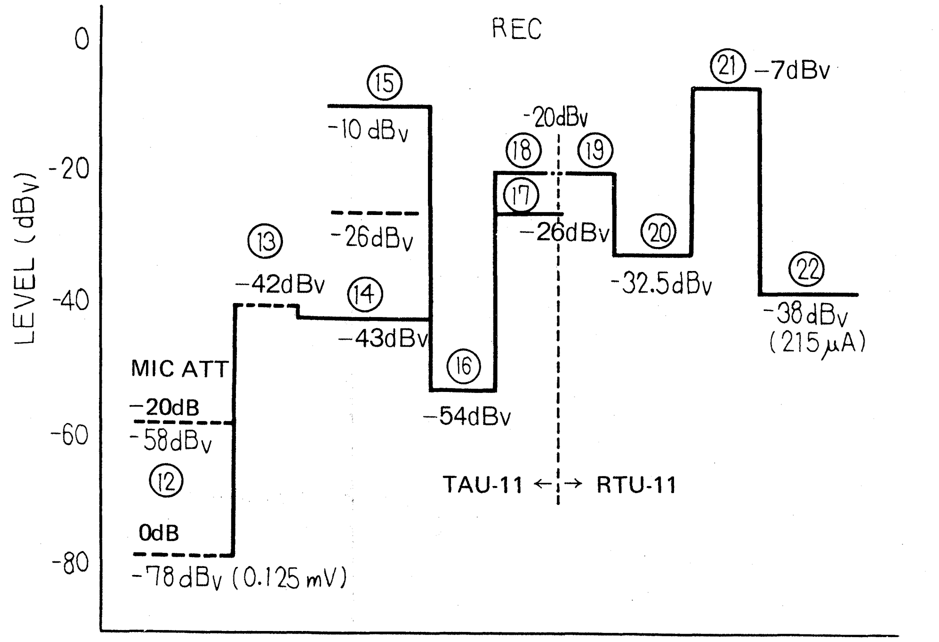
7. BLOCK DIAGRAM


RTU-11 ↔ TAU-11
PB. EQ AMP
PB HEAD
①
Q_{201}
Q_{205}
Q_{209}
②
③
LEVEL ADJ
OUTPUT PLAY
EQ ADJ
Q_{219}
Q_{217}
Q_{213}
Q_{221}
Q_{223}
2T
4T
IEC
INPUT PLAY ④
REC
TAPE
PB
SYNC
S_{301}
SOURCE
S_{201}
LINE OUT VR
LINE AMP
⑧
Q_{111}
Q_{113}
HEAD PHONE AMP
Q_{115}
T_{101}
HEADPHONES
⑨
LINE OUT (PLAY)
SYNC AMP
REC HEAD
⑤
RY_{302-1} SYNC
㉒ REC
Q_{301}
Q_{305}
⑥
SYNC REC MONITOR
SYNC REC MONITOR ⑦
METER AMP
⑩
⑪
METER ADJ
LEVEL METER
TAPE
SOUCE
S_{201}
⑰
Q_{101}
Q_{117}
Q_{105}
Q_{107}
D_{101}
D_{102}
D_{105}
D_{106}
Q_{109}
REC. EQ AMP
㉑
⑳
⑲
LEVEL ADJ
INPUT REC
OUTPUT REC
⑱
Q_{109}
Q_{105}
Q_{101}
Q_{103}
EQ. SW
S_{503}
Q_{113}
Q_{117}
Q_{121}
Q_{125}
Q_{129}
Q_{133}
2T
4T
TAPE
SOURCE
REC AMP
Q_{203}
Q_{201}
⑯
MIC VR
⑭
MIC AMP
⑬
Q_{119}
Q_{117}
⑫
MIC INPUT
LINE VR
LINE IN (REC)
⑮
BIAS ADJ
2T
4T
FIX
LEVEL VR
VR_{501}
Q_{604}
ERASE HEAD
Hi
Lo
FIX
Hi
Lo
BIAS VR
Q_{405}
Q_{406}
Q_{403}
Q_{404}
BIAS OSC
TEST OSC OUT.
Q_{601}
Q_{603}
Q_{602}
LEVEL ADJ
10K
1K
OFF
10KHz LEVEL ADJ
TEST OSC

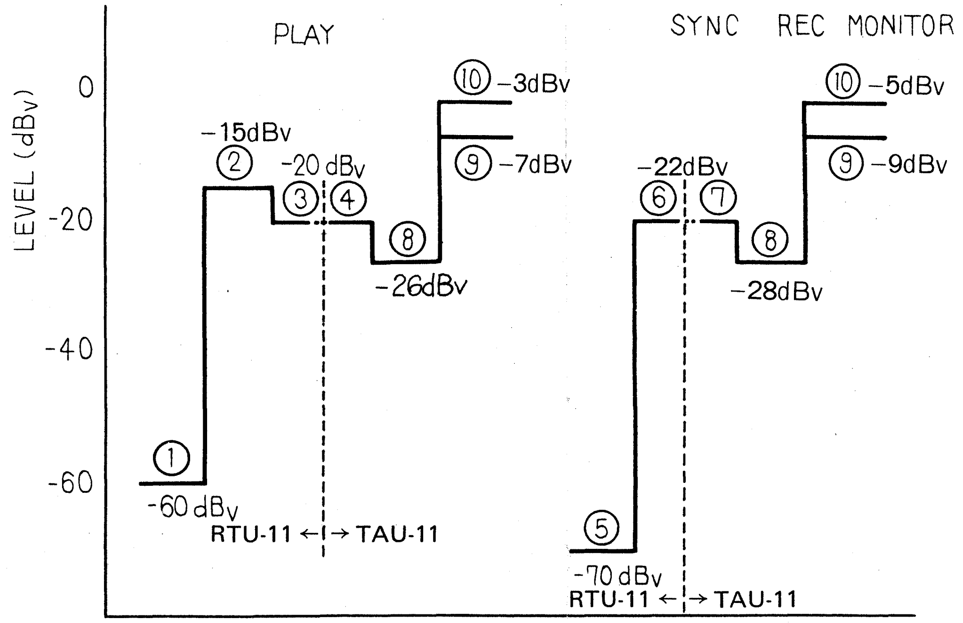
8. LEVEL DIAGRAMS

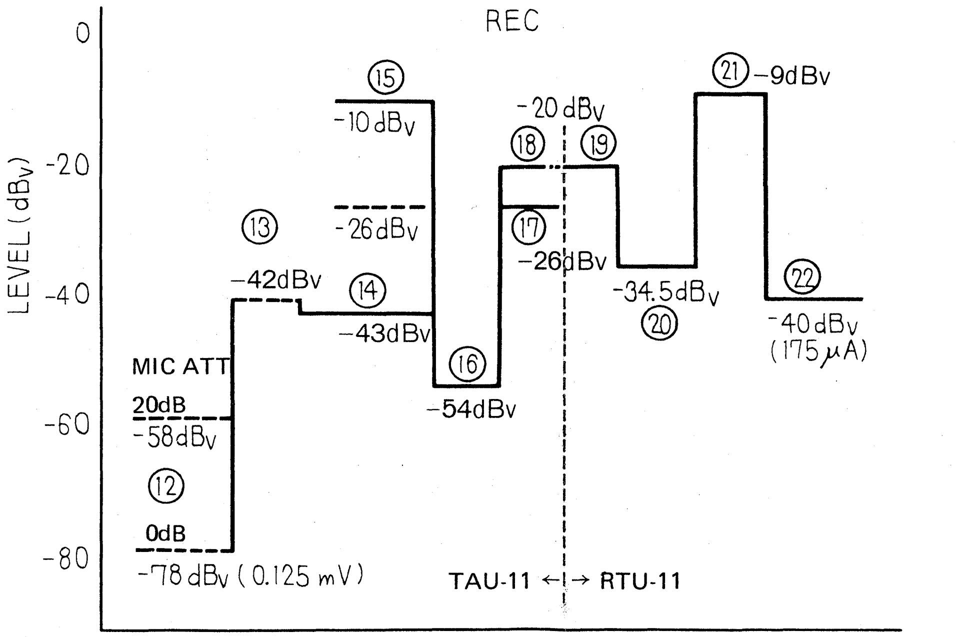
8.1 JT-2022T (0dBv=1v)


PLAY
SYNC REC MONITOR
LEVEL (dBv)
0
-20
-40
-60
① -55dBv
② -12dBv
③ ④ -20dBv
⑧ -26dBv
⑨ -7dBv
⑩ -3dBv
RTU-11 ←¦→ TAU-11
⑤ -65dBv
⑥ ⑦ -17dBv
⑧ -23dBv
⑨ -4dBv
⑩ 0dBv
RTU-11 ←¦→ TAU-11

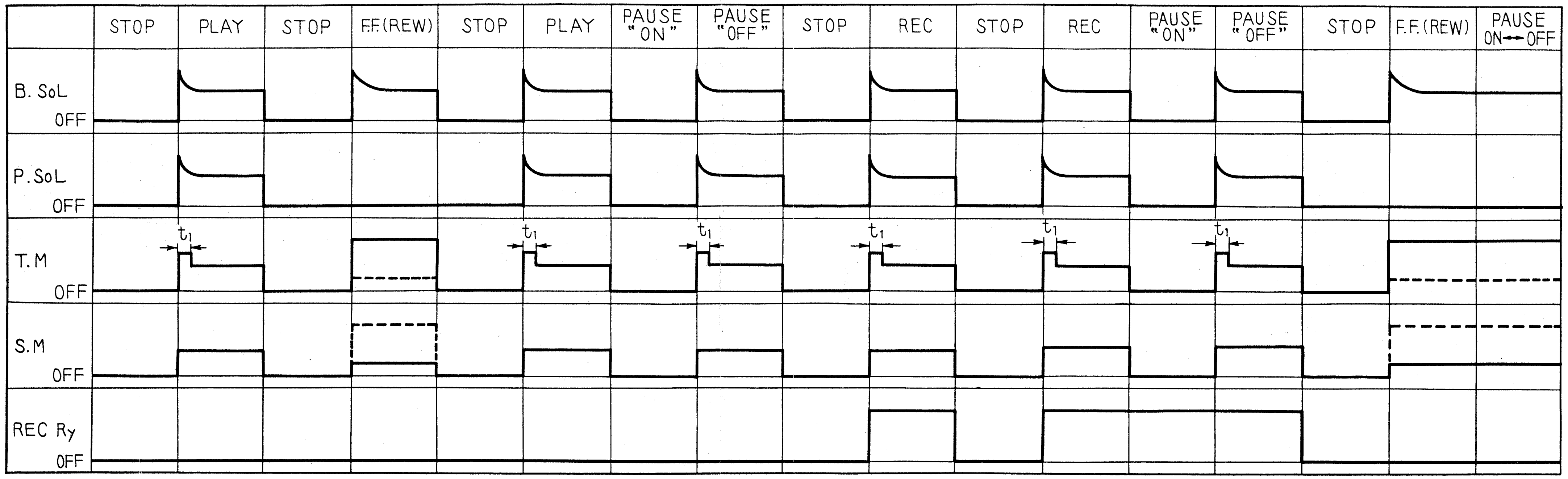

REC
LEVEL (dBv)
0
-20
-40
-60
-80
MIC ATT
-20dB
-58dBv
⑫
0dB
-78dBv (0.125mV)
⑬ -42dBv
⑭ -43dBv
⑮ -10dBv
-26dBv
⑯ -54dBv
⑰ -26dBv
⑱ ⑲ -20dBv
⑳ -32.5dBv
㉑ -7dBv
㉒ -38dBv (215μA)
TAU-11 ←¦→ RTU-11

8.2 JT-2044J (0dBv=1v)

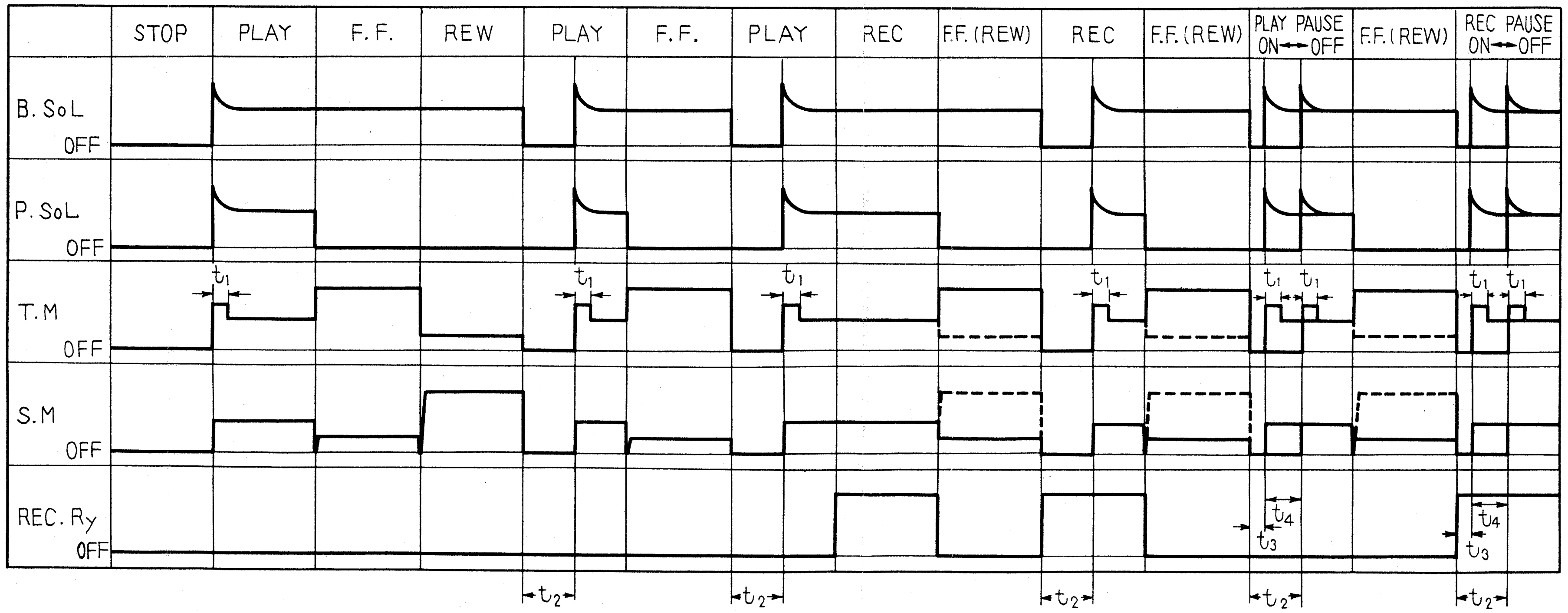

PLAY
SYNC REC MONITOR
LEVEL (dBv)
0
-20
-40
-60
① -60dBv
② -15dBv
③ ④ -20dBv
⑧ -26dBv
⑨ -7dBv
⑩ -3dBv
RTU-11 ←¦→ TAU-11
⑤ -70dBv
⑥ ⑦ -22dBv
⑧ -28dBv
⑨ -9dBv
⑩ -5dBv
RTU-11 ←¦→ TAU-11


REC
LEVEL (dBv)
0
-20
-40
-60
-80
MIC ATT
20dB
-58dBv
⑫
0dB
-78dBv (0.125mV)
⑬ -42dBv
⑭ -43dBv
⑮ -10dBv
-26dBv
⑯ -54dBv
⑰ -26dBv
⑱ ⑲ -20dBv
⑳ -34.5dBv
㉑ -9dBv
㉒ -40dBv (175μA)
TAU-11 ←¦→ RTU-11

9. TIMING CHARTS

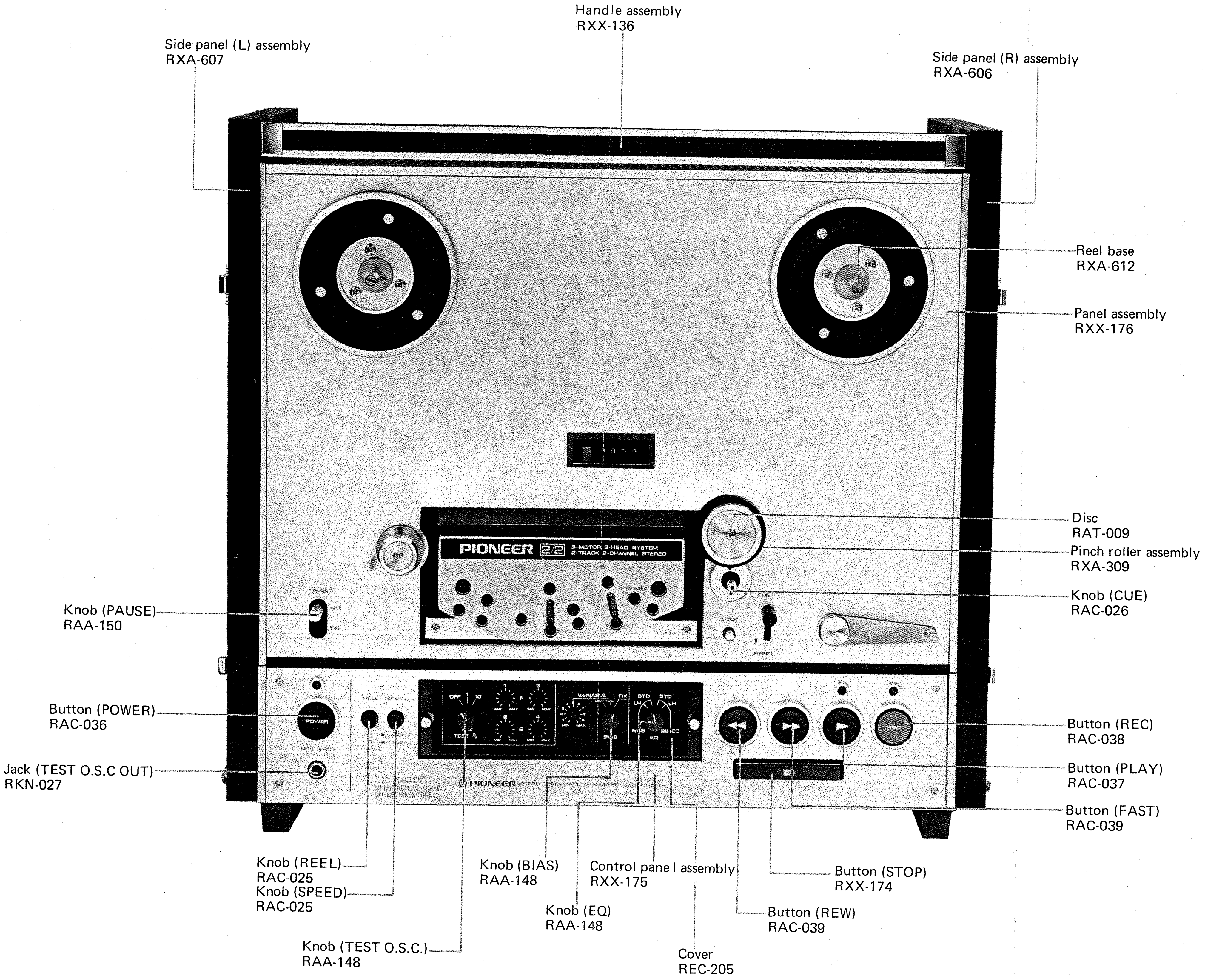

STOP
PLAY
STOP
F.F.(REW)
STOP
PLAY
PAUSE "ON"
PAUSE "OFF"
STOP
REC
STOP
REC
PAUSE "ON"
PAUSE "OFF"
STOP
F.F.(REW)
PAUSE ON↔OFF
B. SoL
OFF
P. SoL
OFF
T. M
OFF
S. M
OFF
REC Ry
OFF
t1

- ∘ t_1 --- T.M Torgue up time(/sec)
- ∘ t_2 --- Switching time
- ∘ t_3 --- PAUSE SW ON
- ∘ t_4 --- Reduced switching time
- ∘ --- REW OPration
- ∘ TAU-11 Rec Mode switch REC position
- ∘ B.SoL Blake solenoid
- ∘ P.SoL Pinch solenoid
- ∘ TM Take up motor
- ∘ SM Supply motor

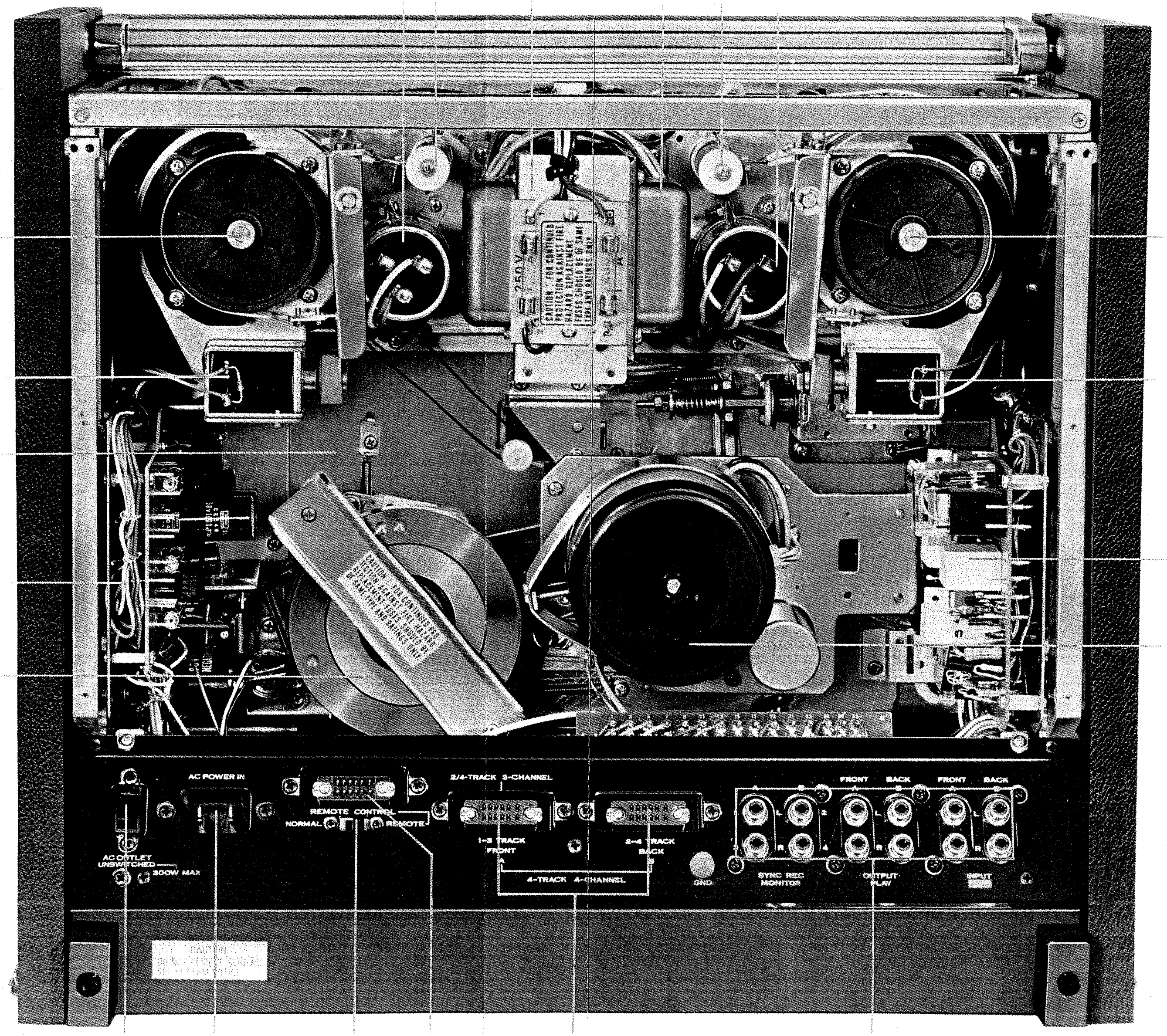

STOP
PLAY
F. F.
REW
PLAY
F. F.
PLAY
REC
F.F. (REW)
REC
F.F. (REW)
PLAY PAUSE ON↔OFF
F.F. (REW)
REC PAUSE ON↔OFF
B. SoL
OFF
P. SoL
OFF
T. M
OFF
S. M
OFF
REC. Ry
OFF
t1
t2
t3
t4

10. RTU-11 PARTS LOCATIONS

10.1 FRONT VIEW

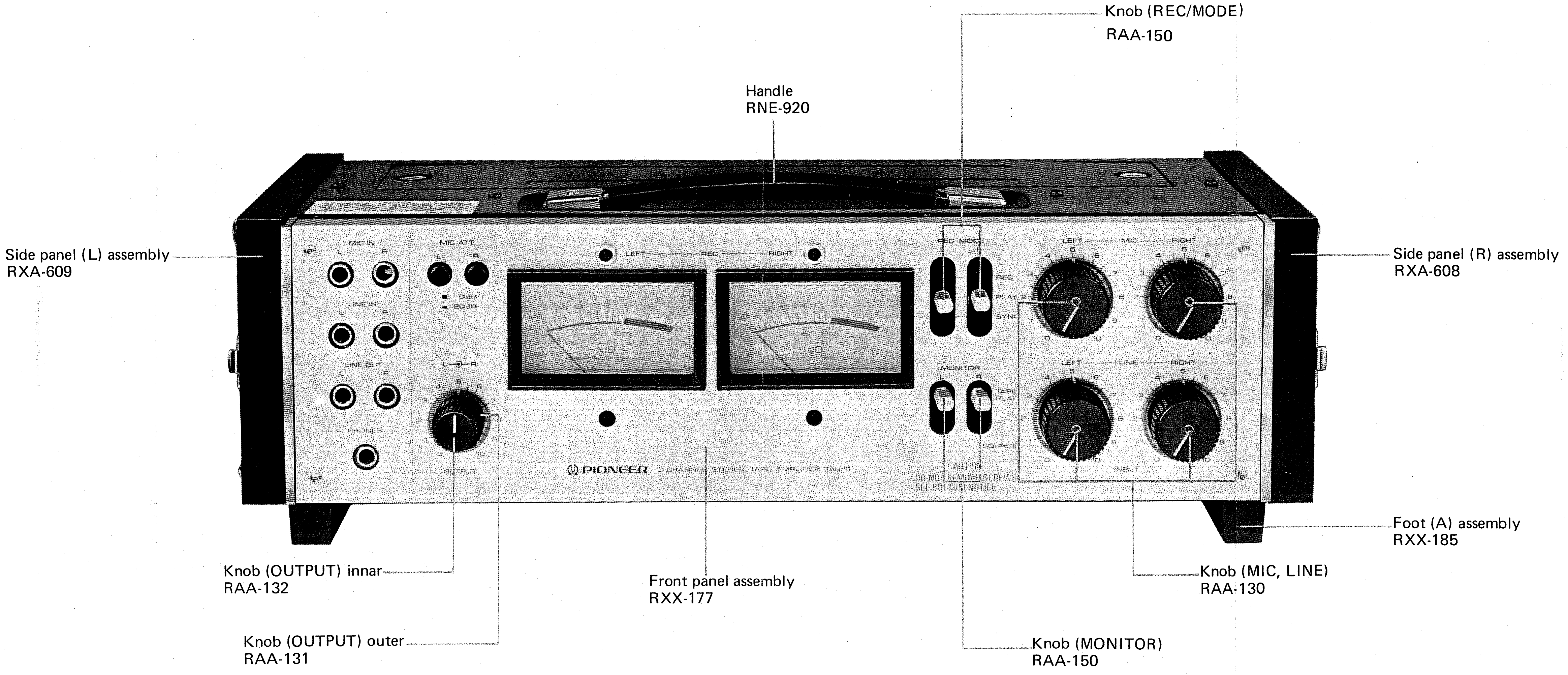

Handle assembly
RXX-136
Side panel (L) assembly
RXA-607
Side panel (R) assembly
RXA-606
Reel base
RXA-612
Panel assembly
RXX-176
Disc
RAT-009
Pinch roller assembly
RXA-309
Knob (CUE)
RAC-026
Knob (PAUSE)
RAA-150
Button (POWER)
RAC-036
Jack (TEST O.S.C OUT)
RKN-027
Button (REC)
RAC-038
Button (PLAY)
RAC-037
Button (FAST)
RAC-039
Knob (REEL)
RAC-025
Knob (SPEED)
RAC-025
Knob (TEST O.S.C.)
RAA-148
Knob (BIAS)
RAA-148
Control panel assembly
RXX-175
Knob (EQ)
RAA-148
Cover
REC-205
Button (STOP)
RXX-174
Button (REW)
RAC-039
PIONEER
POWER
REC

10.2 REAR VIEW

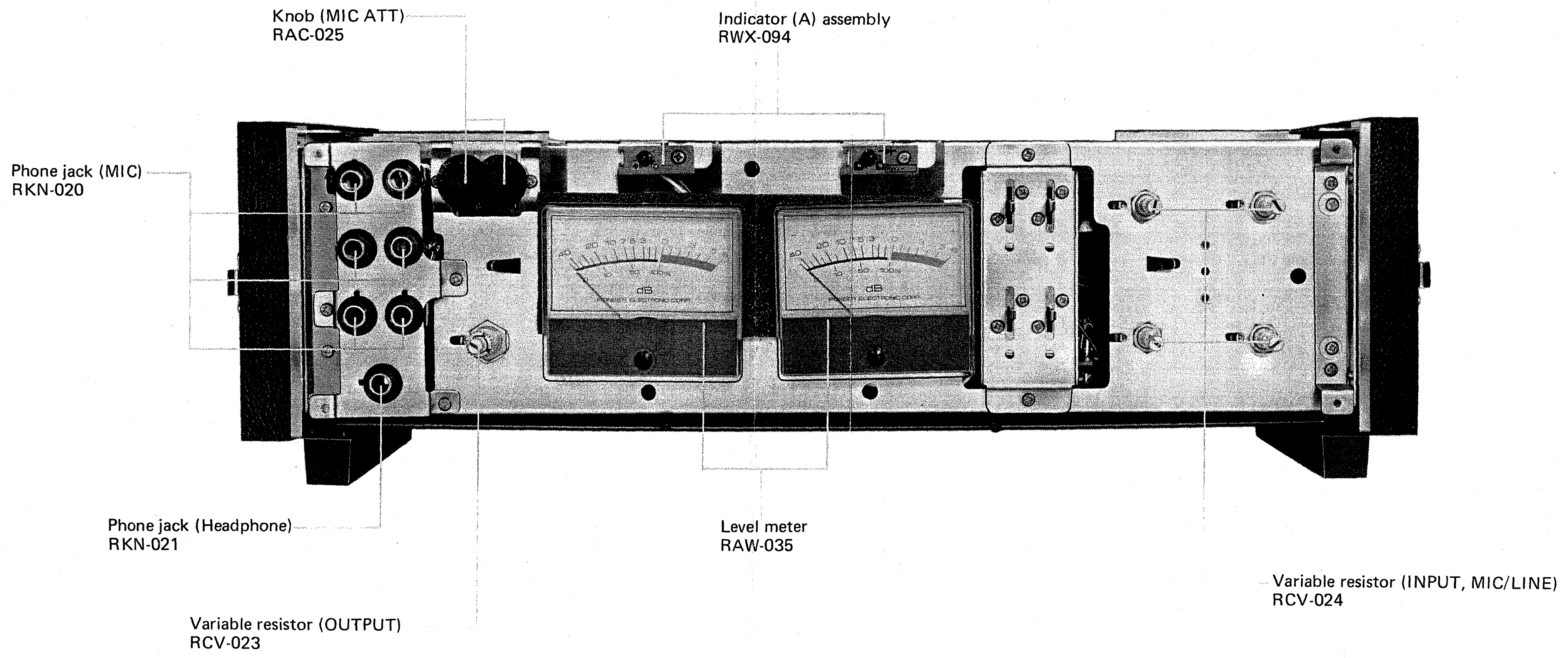

Motor fuse assembly
RWX-048
Wire wound resistor
RCN-024
Capacitor (C4)
RCL-010
Power transformer
PPT-083
Wire wound resistor
RCN-025
Capacitor (C3)
RCL-010
Motor (Take-up)
RXM-015
Solenoid (SL2)
PXP-020
Belt (counter)
REB-077
Power supply O.S.C assembly
RWR-031
Flywheel assembly
RXA-378
Motor (supply)
RXM-015
Solenoid (SL$_1$)
RXP-020
Control assembly
RWG-050
Capstan motor
PXM-020
AC socket (OUTLET)
RKP-002
AC socket (INLET)
RKP-003
Slide switch
RSH-018
Socket B
RKP-012
Socket A
RKP-011
Phono jack (4P)
RKP-006

11. TAU-11 PARTS LOCATIONS

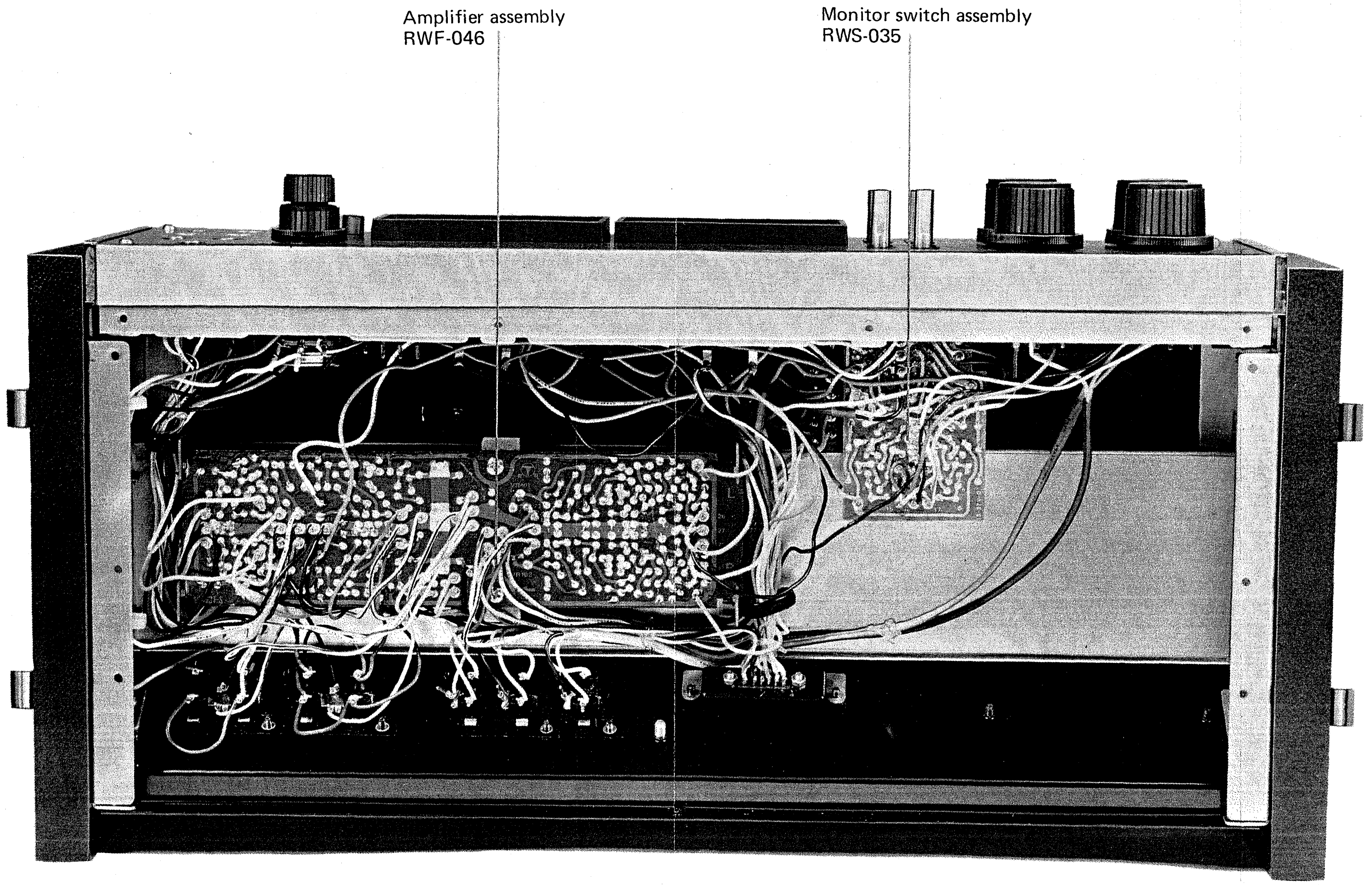
11.1 FRONT VIEW


Knob (REC/MODE)
RAA-150
Handle
RNE-920
Side panel (L) assembly
RXA-609
Side panel (R) assembly
RXA-608
Foot (A) assembly
RXX-185
Knob (OUTPUT) innar
RAA-132
Front panel assembly
RXX-177
Knob (MIC, LINE)
RAA-130
Knob (OUTPUT) outer
RAA-131
Knob (MONITOR)
RAA-150
PIONEER
2 CHANNEL STEREO TAPE AMPLIFIER TAU-11
MIC IN
LINE IN
LINE OUT
PHONES
MIC ATT
OUTPUT
LEFT
REC
RIGHT
REC MODE
MONITOR
MIC
LINE
INPUT
CAUTION
DO NOT REMOVE SCREWS
SEE BOTTOM NOTICE

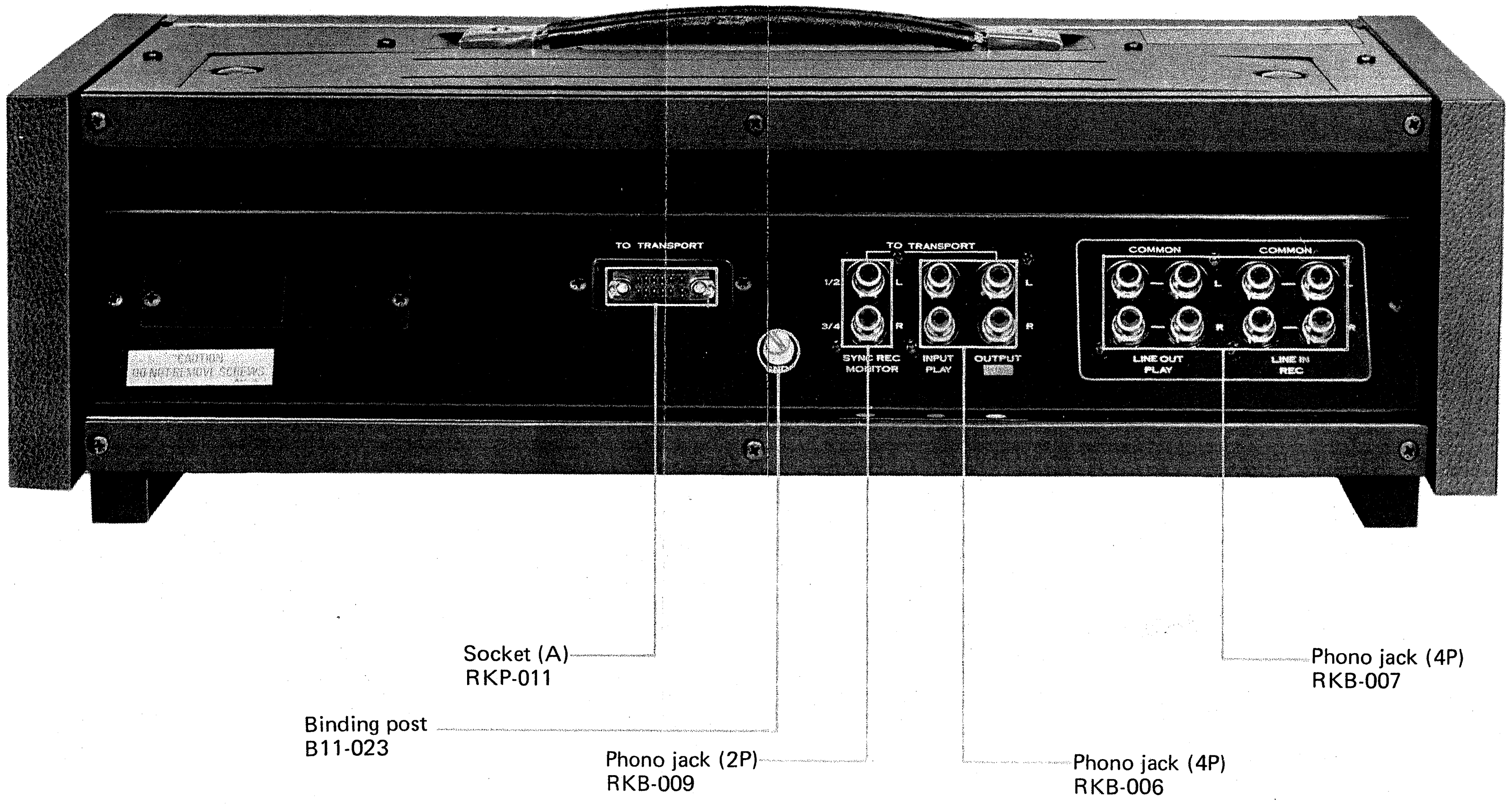
11.2 FRONT VIEW (WITH PANEL REMOVED)


Knob (MIC ATT)
RAC-025
Indicator (A) assembly
RWX-094
Phone jack (MIC)
RKN-020
Phone jack (Headphone)
RKN-021
Level meter
RAW-035
Variable resistor (INPUT, MIC/LINE)
RCV-024
Variable resistor (OUTPUT)
RCV-023
dB

11.3 Bottom VIEW


Amplifier assembly
RWF-046
Monitor switch assembly
RWS-035

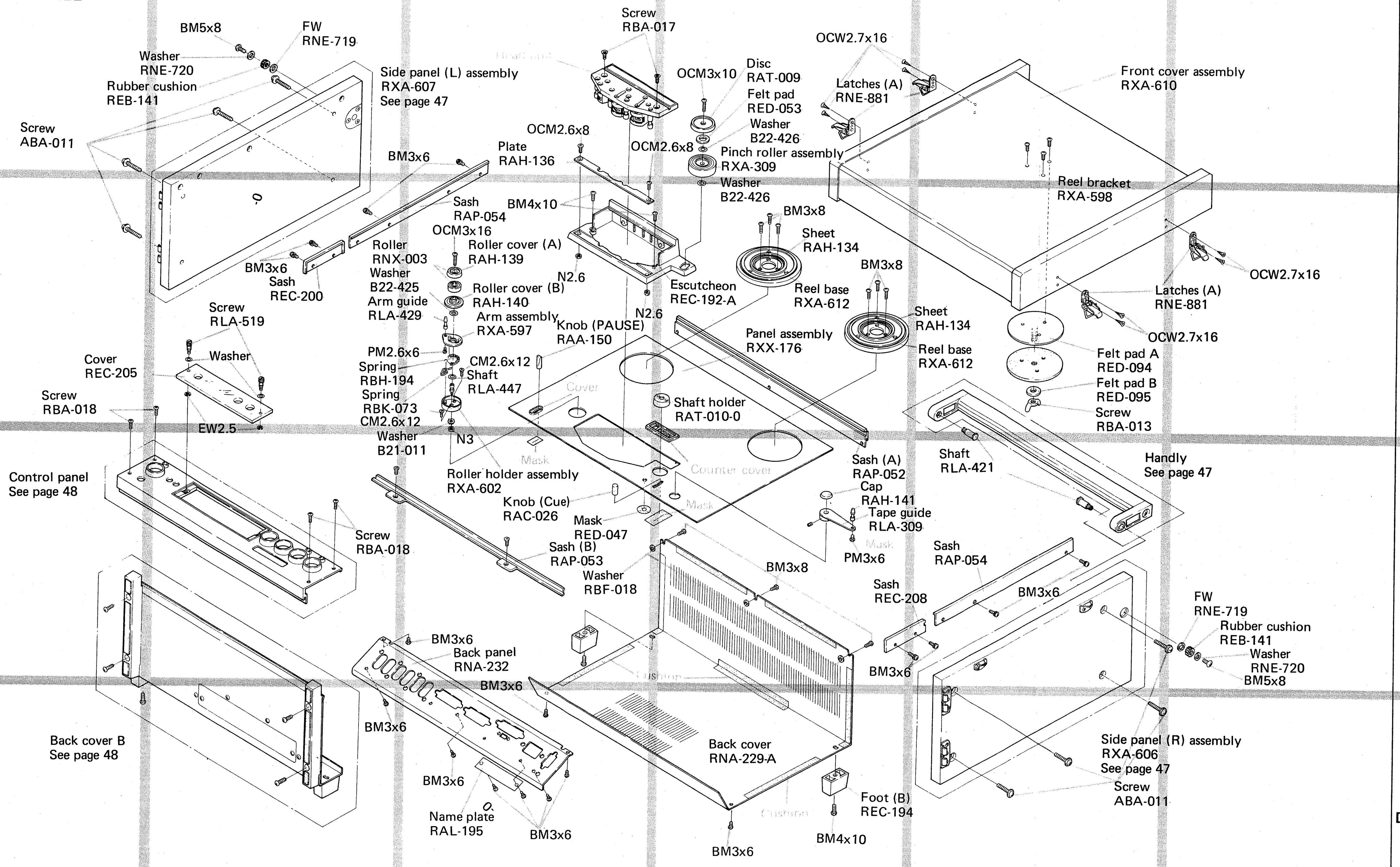
11.4 REAR VIEW


CAUTION
DO NOT REMOVE SCREWS
TO TRANSPORT
TO TRANSPORT
1/2
3/4
L
R
SYNC REC
MONITOR
INPUT
PLAY
OUTPUT
COMMON
COMMON
LINE OUT
PLAY
LINE IN
REC
Socket (A)
RKP-011
Binding post
B11-023
Phono jack (2P)
RKB-009
Phono jack (4P)
RKB-006
Phono jack (4P)
RKB-007

12. RTU-11 EXPLODED VIEW

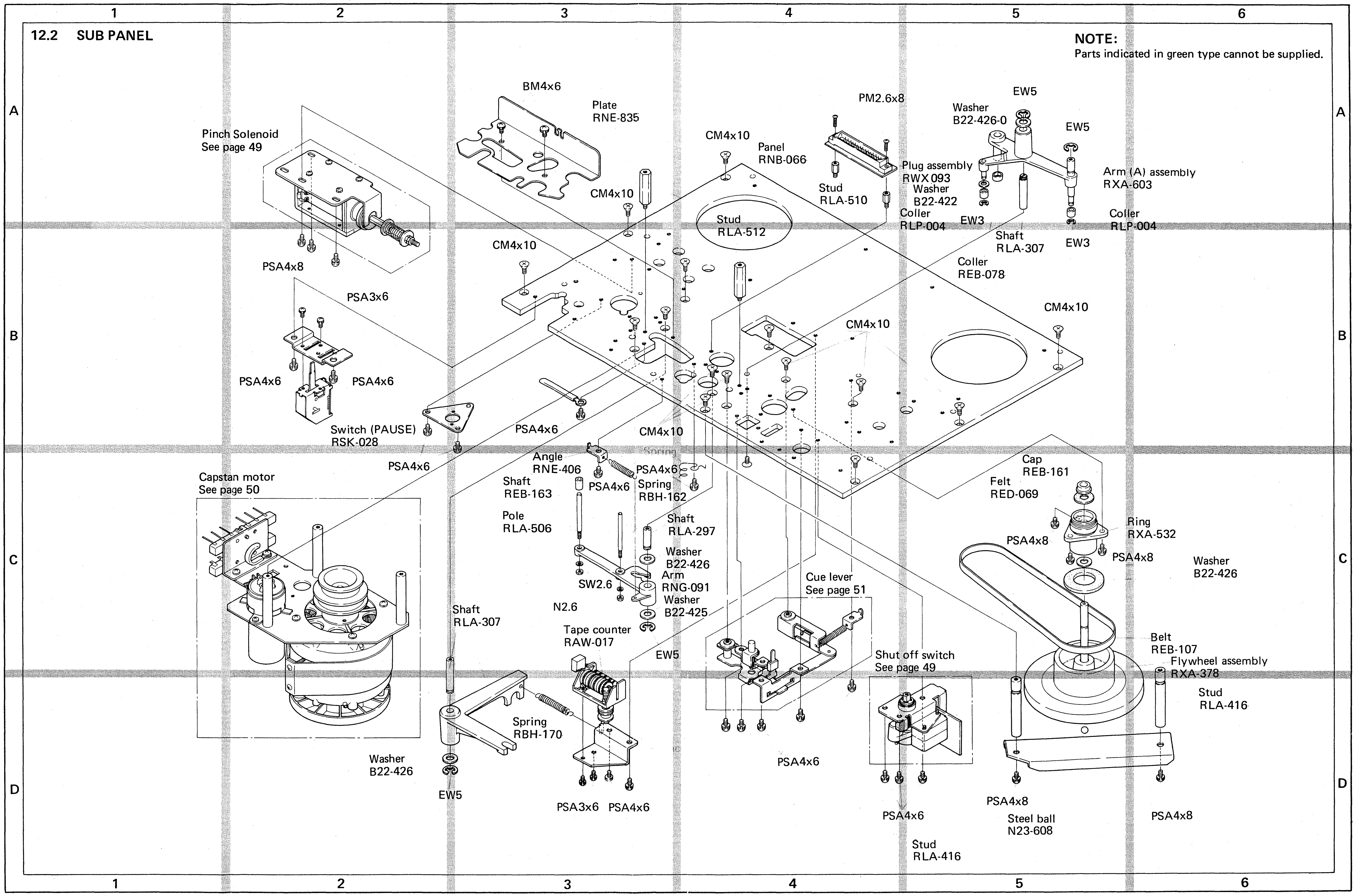
12.1 MAIN PANEL

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
4
5
6
A
B
C
D
BM5x8
FW
RNE-719
Washer
RNE-720
Rubber cushion
REB-141
Screw
ABA-011
Side panel (L) assembly
RXA-607
See page 47
Screw
RBA-017
OCM3x10
Disc
RAT-009
Felt pad
RED-053
Washer
B22-426
Pinch roller assembly
RXA-309
Washer
B22-426
OCW2.7x16
Latches (A)
RNE-881
Front cover assembly
RXA-610
Reel bracket
RXA-598
OCM2.6x8
OCM2.6x8
Plate
RAH-136
BM3x6
Sash
RAP-054
BM4x10
OCM3x16
Roller
RNX-003
Roller cover (A)
RAH-139
Washer
B22-425
Roller cover (B)
RAH-140
Arm guide
RLA-429
Arm assembly
RXA-597
N2.6
N2.6
Escutcheon
REC-192-A
BM3x8
Sheet
RAH-134
BM3x8
Reel base
RXA-612
Sheet
RAH-134
Reel base
RXA-612
OCW2.7x16
Latches (A)
RNE-881
OCW2.7x16
BM3x6
Sash
REC-200
Screw
RLA-519
Washer
Cover
REC-205
Screw
RBA-018
EW2.5
PM2.6x6
Spring
RBH-194
Spring
RBK-073
CM2.6x12
Washer
B21-011
CM2.6x12
Shaft
RLA-447
N3
Knob (PAUSE)
RAA-150
Panel assembly
RXX-176
Cover
Shaft holder
RAT-010-0
Mask
Counter cover
Mask
Felt pad A
RED-094
Felt pad B
RED-095
Screw
RBA-013
Shaft
RLA-421
Handly
See page 47
Control panel
See page 48
Roller holder assembly
RXA-602
Knob (Cue)
RAC-026
Mask
RED-047
Sash (B)
RAP-053
Washer
RBF-018
Sash (A)
RAP-052
Cap
RAH-141
Tape guide
RLA-309
Mask
PM3x6
Screw
RBA-018
BM3x8
Sash
RAP-054
Sash
REC-208
BM3x6
FW
RNE-719
Rubber cushion
REB-141
Washer
RNE-720
BM5x8
BM3x6
Back panel
RNA-232
BM3x6
BM3x6
Cushion
Back cover B
See page 48
BM3x6
Name plate
RAL-195
BM3x6
Back cover
RNA-229-A
Cushion
Foot (B)
REC-194
BM4x10
BM3x6
Side panel (R) assembly
RXA-606
See page 47
Screw
ABA-011

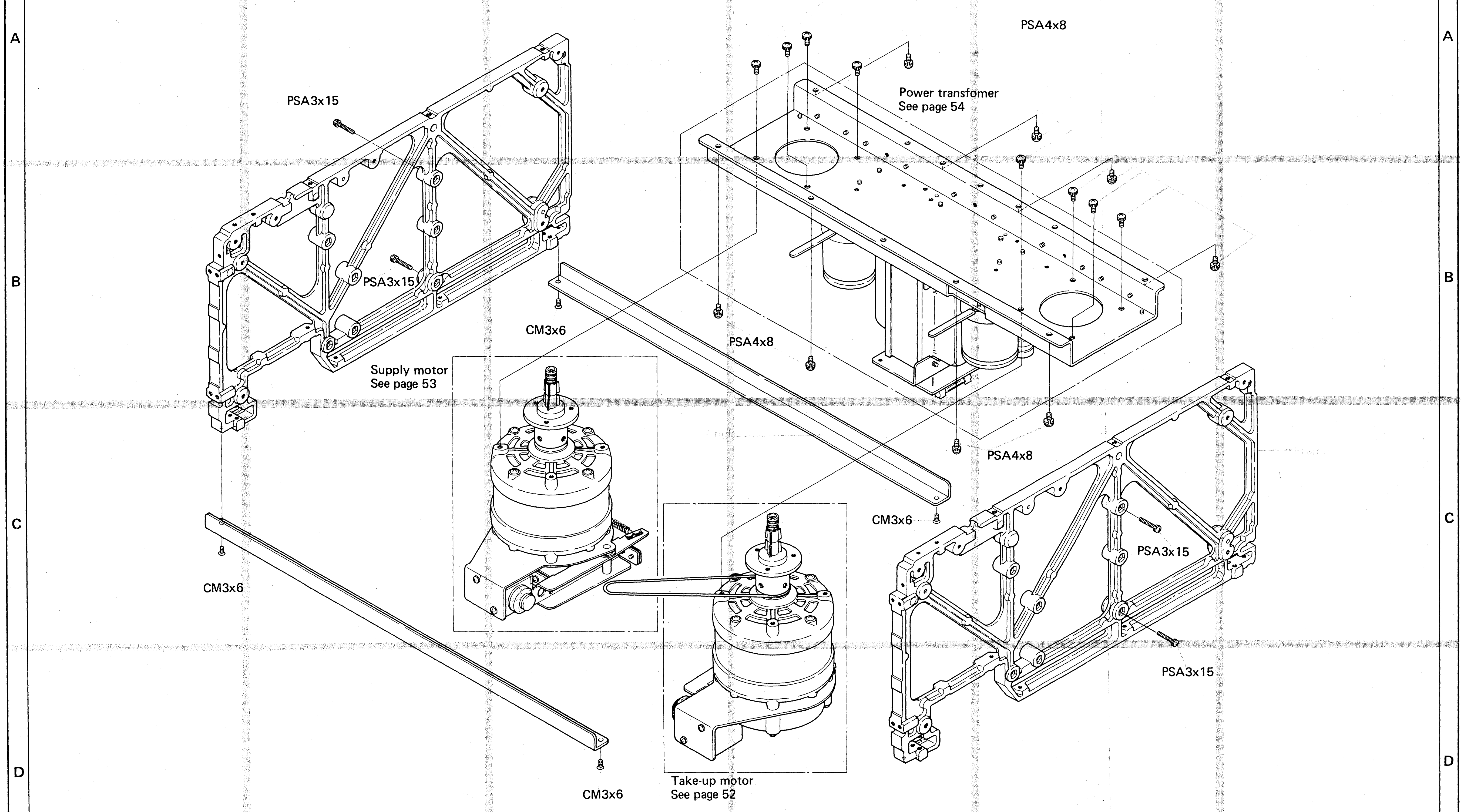
12.2 SUB PANEL

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
4
5
6
A
B
C
D
BM4x6
Plate
RNE-835
Pinch Solenoid
See page 49
PSA4x8
PSA3x6
PSA4x6
PSA4x6
Switch (PAUSE)
RSK-028
PSA4x6
CM4x10
CM4x10
CM4x10
Panel
RNB-066
Stud
RLA-512
PM2.6x8
Stud
RLA-510
Plug assembly
RWX 093
Washer
B22-422
Coller
RLP-004
EW3
Washer
B22-426-0
EW5
EW5
Arm (A) assembly
RXA-603
Coller
RLP-004
Shaft
RLA-307
EW3
Coller
REB-078
CM4x10
CM4x10
PSA4x6
CM4x10
Spring
Angle
RNE-406
PSA4x6
PSA4x6
Spring
RBH-162
Shaft
REB-163
Pole
RLA-506
Shaft
RLA-297
Washer
B22-426
Arm
RNG-091
Washer
B22-425
SW2.6
N2.6
Tape counter
RAW-017
EW5
Capstan motor
See page 50
Shaft
RLA-307
Washer
B22-426
EW5
Spring
RBH-170
PSA3x6
PSA4x6
Cue lever
See page 51
PSA4x6
Shut off switch
See page 49
PSA4x6
Stud
RLA-416
Cap
REB-161
Felt
RED-069
PSA4x8
Ring
RXA-532
PSA4x8
Washer
B22-426
Belt
REB-107
Flywheel assembly
RXA-378
Stud
RLA-416
PSA4x8
Steel ball
N23-608
PSA4x8

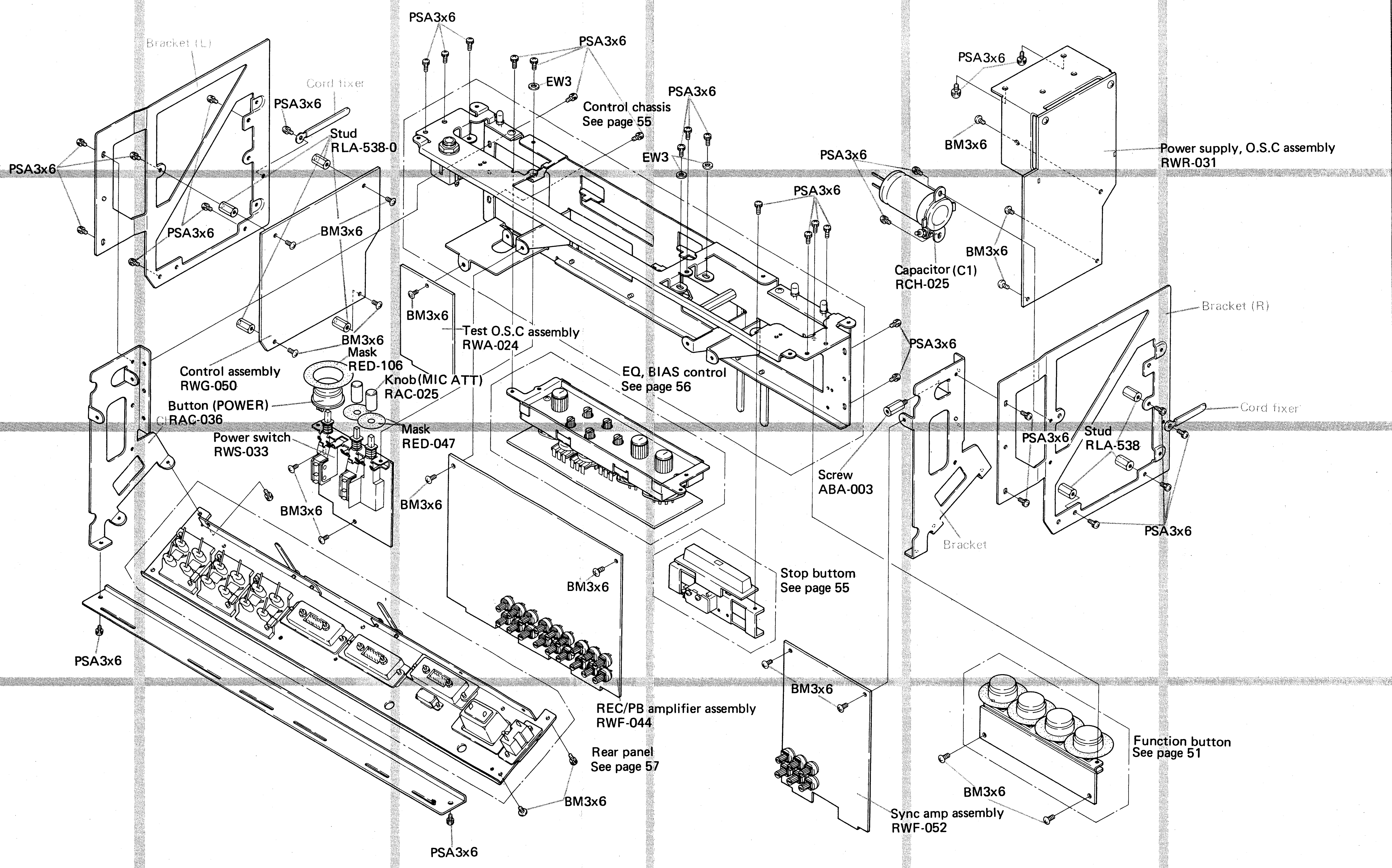
12.3 FRAME CHASSIS

NOTE:
Parts indicated in green type cannot be supplied.


A
PSA4x8
Power transfomer
See page 54
PSA3x15
PSA3x15
B
CM3x6
PSA4x8
Supply motor
See page 53
PSA4x8
CM3x6
C
PSA3x15
CM3x6
PSA3x15
D
CM3x6
Take-up motor
See page 52

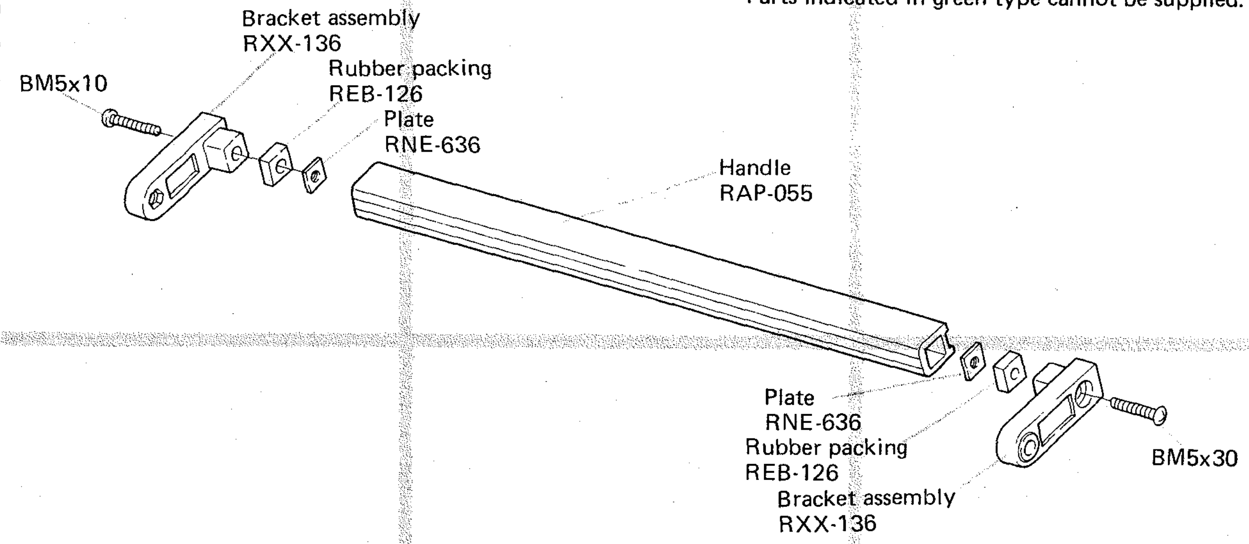
12.4 CONTROL & REAR PANEL

NOTE:
Parts indicated in green type cannot be supplied.

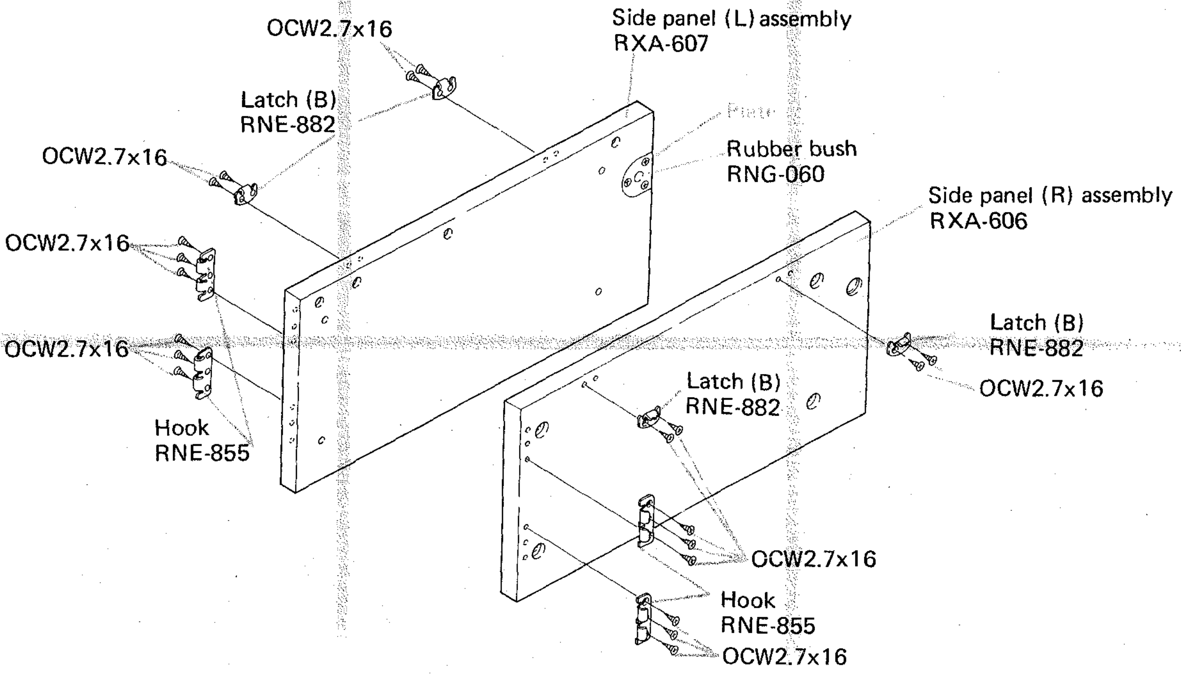

1
2
3
4
5
6
A
B
C
D
Bracket (L)
Cord fixer
PSA3x6
Stud
RLA-538-0
PSA3x6
PSA3x6
BM3x6
PSA3x6
PSA3x6
EW3
Control chassis
See page 55
PSA3x6
EW3
PSA3x6
PSA3x6
PSA3x6
BM3x6
Power supply, O.S.C assembly
RWR-031
BM3x6
Capacitor (C1)
RCH-025
Bracket (R)
BM3x6
Test O.S.C assembly
RWA-024
BM3x6
Mask
RED-106
Control assembly
RWG-050
Knob (MIC ATT)
RAC-025
Button (POWER)
RAC-036
Mask
RED-047
Power switch
RWS-033
EQ, BIAS control
See page 56
PSA3x6
Cord fixer
PSA3x6
Stud
RLA-538
Screw
ABA-003
BM3x6
BM3x6
Bracket
PSA3x6
Stop buttom
See page 55
BM3x6
PSA3x6
BM3x6
REC/PB amplifier assembly
RWF-044
Rear panel
See page 57
BM3x6
PSA3x6
Function button
See page 51
BM3x6
Sync amp assembly
RWF-052

12.5 HANDLE

NOTE:
Parts indicated in green type cannot be supplied.

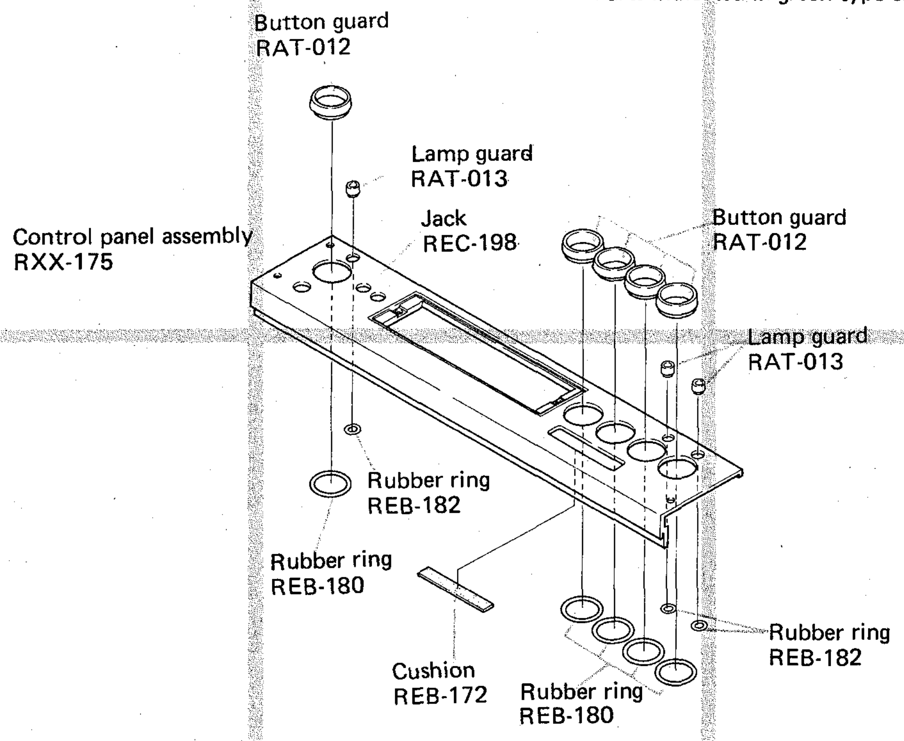

Bracket assembly
RXX-136
BM5x10
Rubber packing
REB-126
Plate
RNE-636
Handle
RAP-055
Plate
RNE-636
Rubber packing
REB-126
Bracket assembly
RXX-136
BM5x30

12.6 SIDE PANEL


OCW2.7x16
Side panel (L) assembly
RXA-607
Latch (B)
RNE-882
Plate
OCW2.7x16
Rubber bush
RNG-060
Side panel (R) assembly
RXA-606
OCW2.7x16
OCW2.7x16
Latch (B)
RNE-882
Latch (B)
RNE-882
OCW2.7x16
Hook
RNE-855
OCW2.7x16
Hook
RNE-855
OCW2.7x16

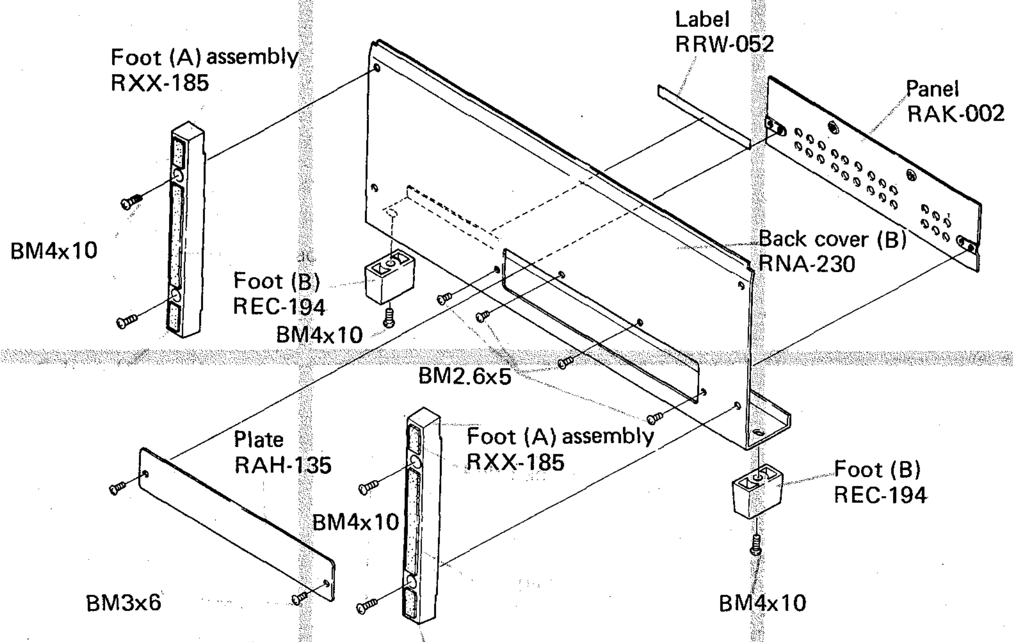
12.7 CONTROL PANEL

NOTE:
Parts indicated in green type cannot be supplied.



1
2
3
A
B
Button guard
RAT-012
Lamp guard
RAT-013
Control panel assembly
RXX-175
Jack
REC-198
Button guard
RAT-012
Lamp guard
RAT-013
Rubber ring
REB-182
Rubber ring
REB-180
Rubber ring
REB-182
Cushion
REB-172
Rubber ring
REB-180

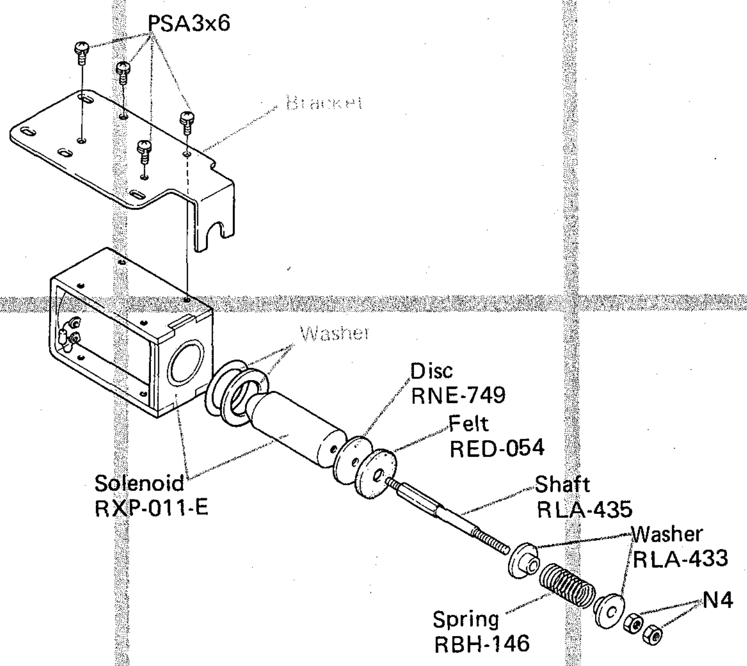
12.8 BACK COVER B



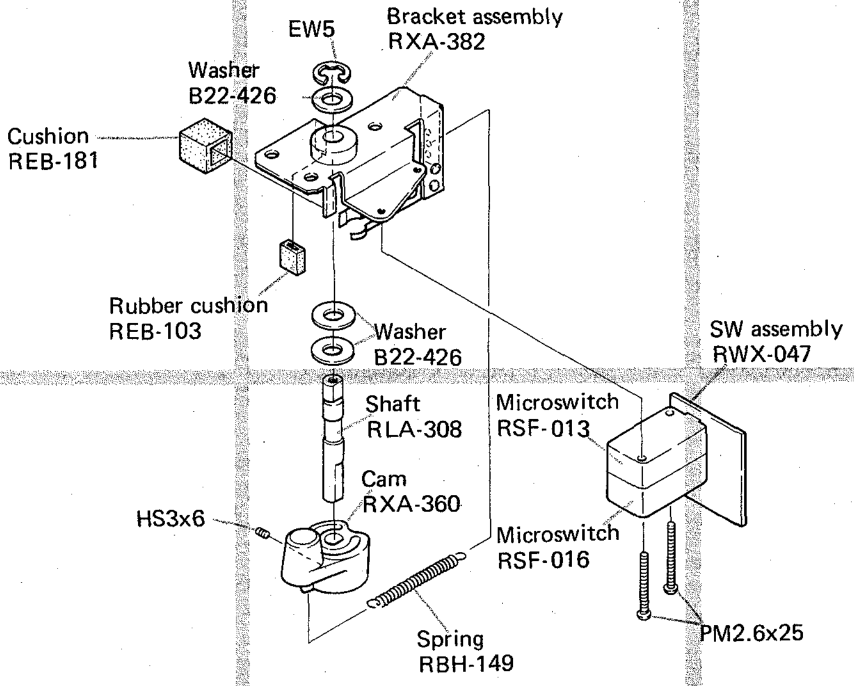
C
D
1
2
3
Foot (A) assembly
RXX-185
Label
RRW-052
Panel
RAK-002
BM4x10
Back cover (B)
RNA-230
Foot (B)
REC-194
BM4x10
BM2.6x5
Plate
RAH-135
Foot (A) assembly
RXX-185
Foot (B)
REC-194
BM4x10
BM3x6
BM4x10

12.9 PINCH SOLENOID (SL3)

NOTE:
Parts indicated in green type cannot be supplied.

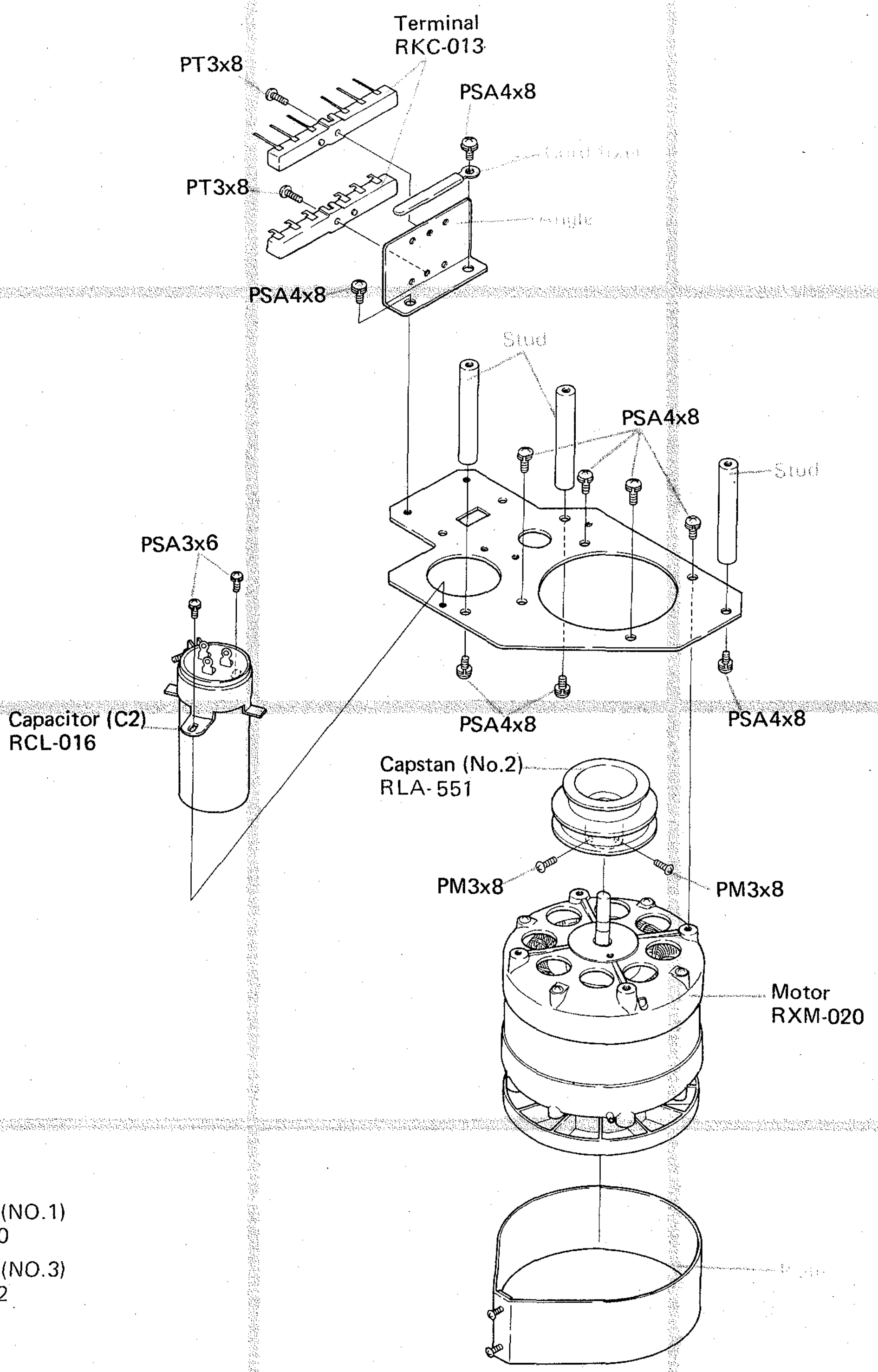

PSA3x6
Bracket
Washer
Disc
RNE-749
Felt
RED-054
Solenoid
RXP-011-E
Shaft
RLA-435
Washer
RLA-433
N4
Spring
RBH-146

12.10 SHUT-OFF SWITCH


EW5
Bracket assembly
RXA-382
Washer
B22-426
Cushion
REB-181
Rubber cushion
REB-103
Washer
B22-426
SW assembly
RWX-047
Shaft
RLA-308
Microswitch
RSF-013
Cam
RXA-360
HS3x6
Microswitch
RSF-016
PM2.6x25
Spring
RBH-149

12.11 CAPSTAN MOTOR

NOTE:
Parts indicated in green type cannot be supplied.

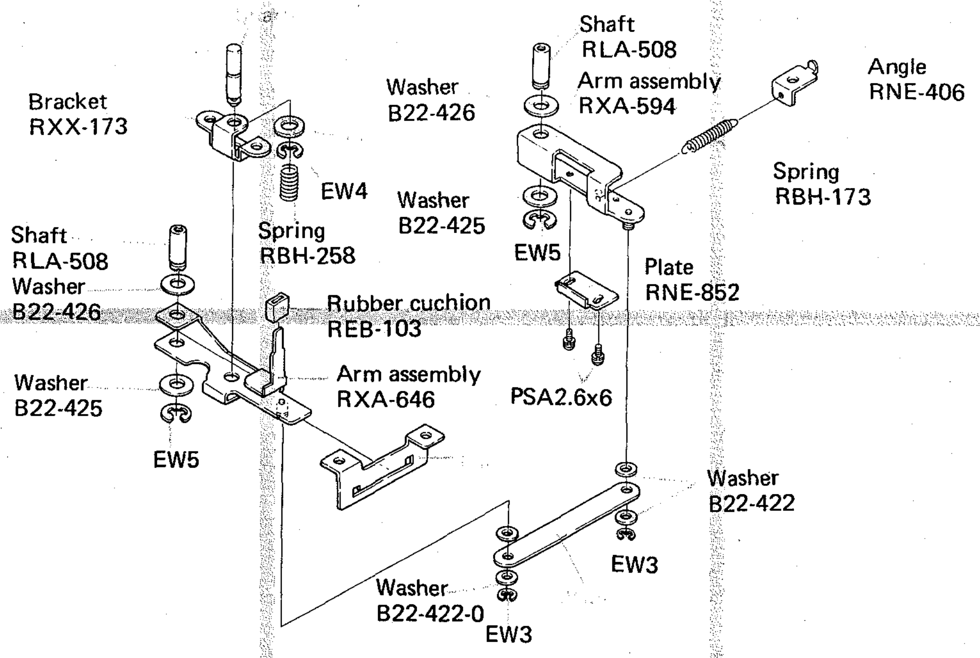

Terminal
RKC-013
PT3x8
PSA4x8
Cord fixer
PT3x8
Angle
PSA4x8
Stud
PSA4x8
Stud
PSA3x6
Capacitor (C2)
RCL-016
PSA4x8
PSA4x8
Capstan (No.2)
RLA-551
PM3x8
PM3x8
Motor
RXM-020
Belt
1
2
3
A
B
C
D

Capstan (NO.1)
RLA-550

Capstan (NO.3)
RLA-552

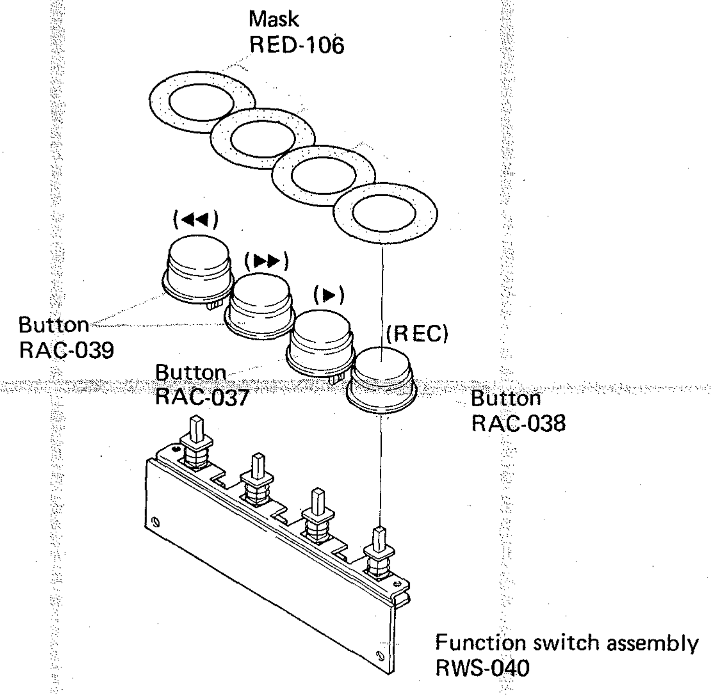
12.12 CUE LEVER

NOTE:
Part indicated in green type cannot be supplied.


Shaft
RLA-508
Arm assembly
RXA-594
Angle
RNE-406
Washer
B22-426
Bracket
RXX-173
EW4
Washer
B22-425
Spring
RBH-173
Shaft
RLA-508
Spring
RBH-258
EW5
Plate
RNE-852
Washer
B22-426
Rubber cuchion
REB-103
Arm assembly
RXA-646
Washer
B22-425
PSA2.6x6
EW5
Washer
B22-422
EW3
Washer
B22-422-0
EW3

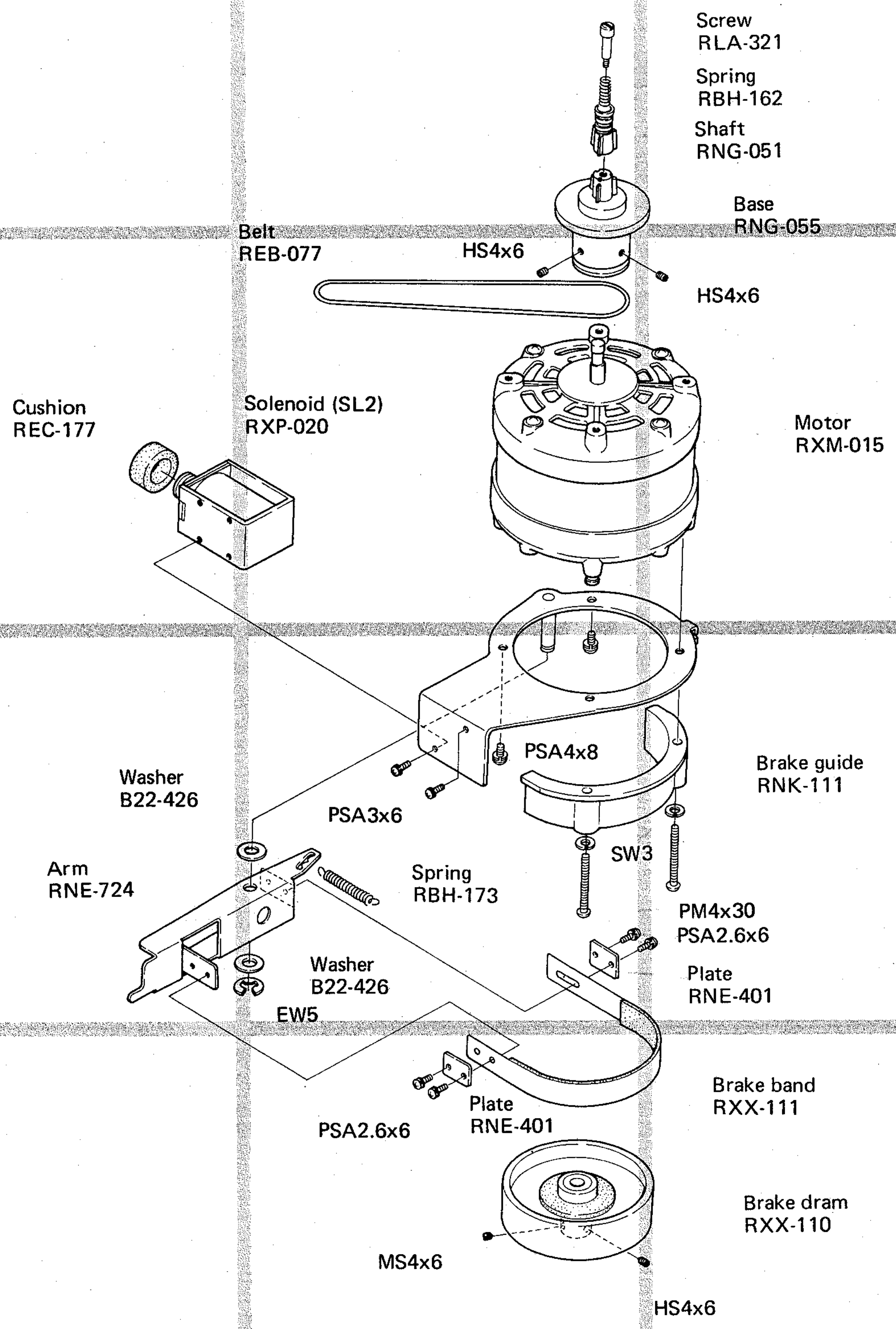
12.13 FUNCTION BUTTON

NOTE:
Parts indicated in green type cannot be supplied.


Mask
RED-106
(◀◀)
(▶▶)
(▶)
(REC)
Button
RAC-039
Button
RAC-037
Button
RAC-038
Function switch assembly
RWS-040

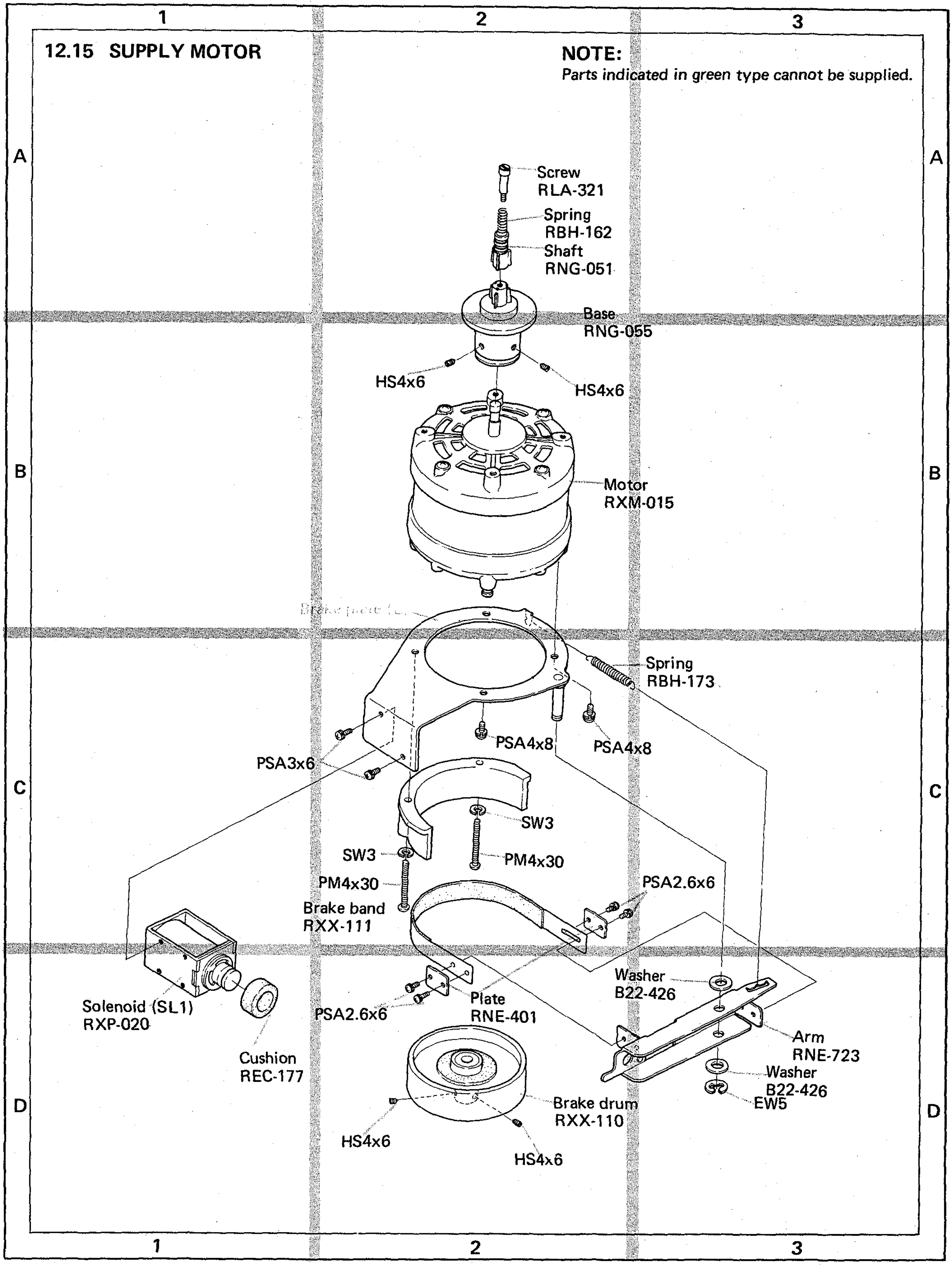
12.14 TAKE-UP MOTOR

NOTE:
Parts indicated in green type cannot be supplied.


Screw
RLA-321
Spring
RBH-162
Shaft
RNG-051
Base
RNG-055
Belt
REB-077
HS4x6
HS4x6
Cushion
REC-177
Solenoid (SL2)
RXP-020
Motor
RXM-015
PSA4x8
Washer
B22-426
Brake guide
RNK-111
PSA3x6
SW3
Arm
RNE-724
Spring
RBH-173
PM4x30
PSA2.6x6
Washer
B22-426
Plate
RNE-401
EW5
Brake band
RXX-111
Plate
RNE-401
PSA2.6x6
Brake dram
RXX-110
MS4x6
HS4x6

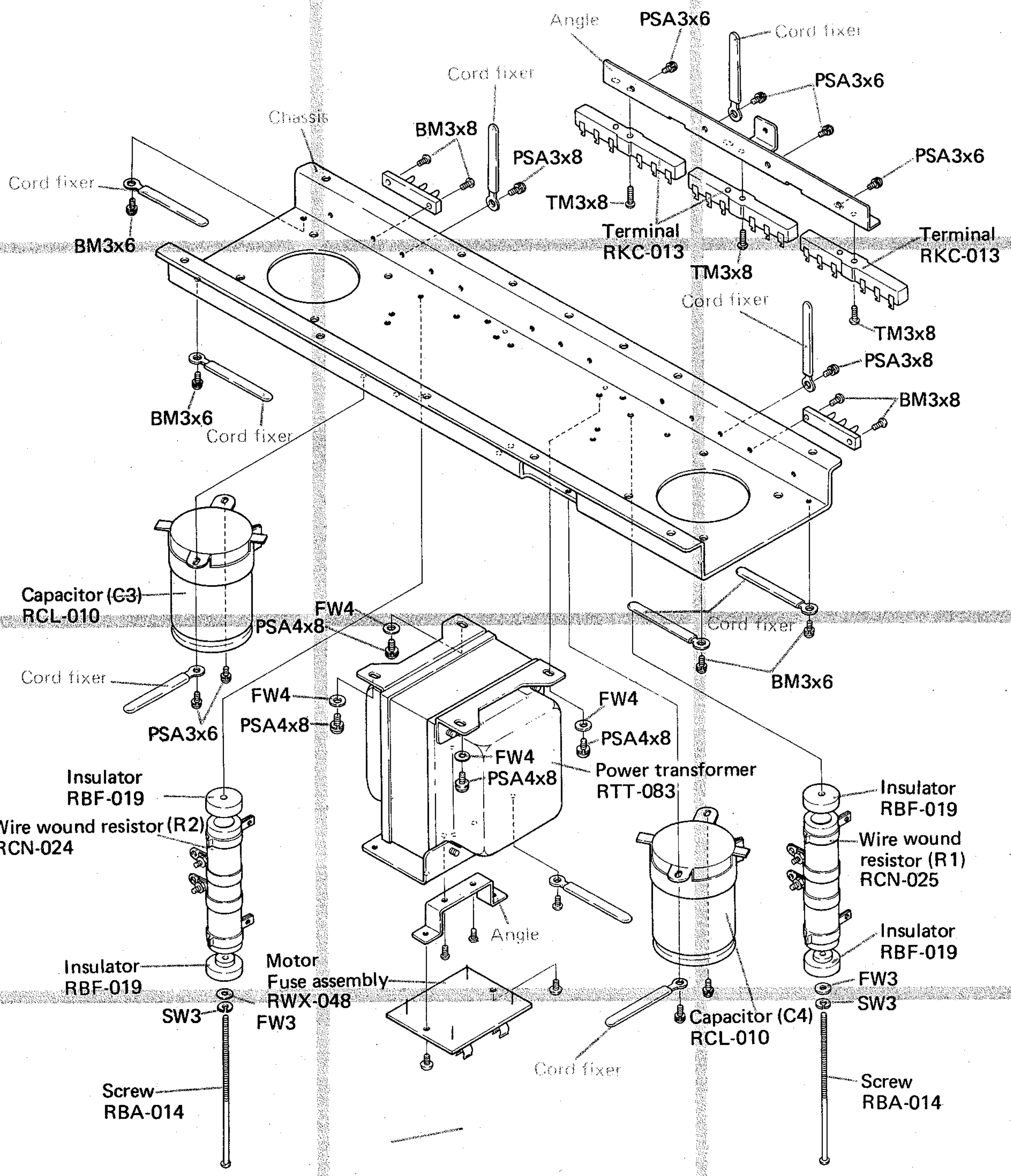
12.15 SUPPLY MOTOR

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
A
B
C
D
Screw
RLA-321
Spring
RBH-162
Shaft
RNG-051
Base
RNG-055
HS4x6
HS4x6
Motor
RXM-015
Spring
RBH-173
PSA4x8
PSA4x8
PSA3x6
SW3
SW3
PM4x30
PM4x30
PSA2.6x6
Brake band
RXX-111
Washer
B22-426
Solenoid (SL1)
RXP-020
PSA2.6x6
Plate
RNE-401
Arm
RNE-723
Washer
B22-426
EW5
Cushion
REC-177
Brake drum
RXX-110
HS4x6
HS4x6

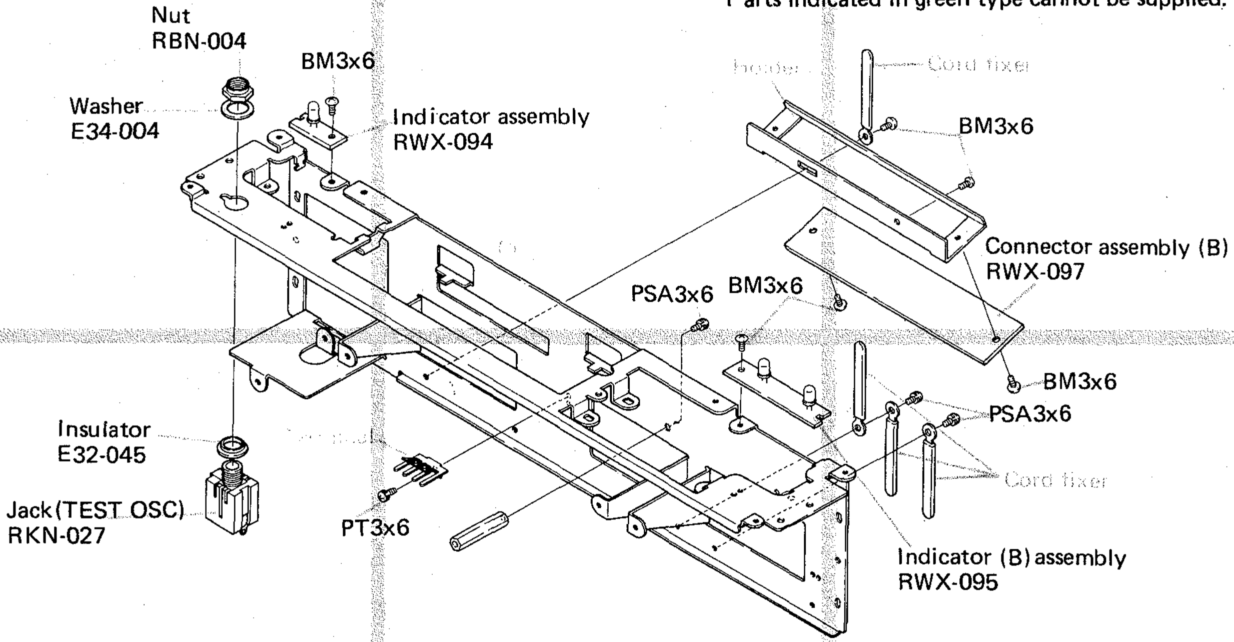
12.16 POWER TRANSFORMER

NOTE:
Parts indicated in green type cannot be supplied.


Angle
PSA3x6
Cord fixer
PSA3x6
Cord fixer
Chassis
BM3x8
PSA3x8
PSA3x6
Cord fixer
TM3x8
Terminal
RKC-013
Terminal
RKC-013
BM3x6
TM3x8
Cord fixer
TM3x8
PSA3x8
BM3x8
BM3x6
Cord fixer
Capacitor (~~C3~~)
RCL-010
FW4
PSA4x8
Cord fixer
BM3x6
Cord fixer
FW4
PSA4x8
FW4
PSA4x8
PSA3x6
FW4
PSA4x8
Power transformer
RTT-083
Insulator
RBF-019
Insulator
RBF-019
Wire wound resistor (R2)
RCN-024
Wire wound
resistor (R1)
RCN-025
Angle
Insulator
RBF-019
Insulator
RBF-019
Motor
Fuse assembly
RWX-048
FW3
SW3
SW3
FW3
Capacitor (C4)
RCL-010
Cord fixer
Screw
RBA-014
Screw
RBA-014

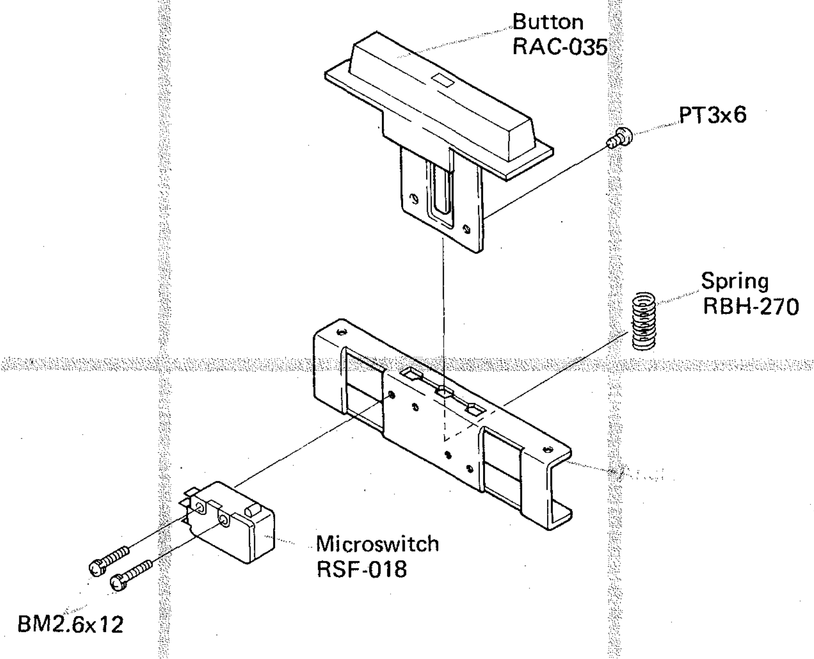
12.17 CONTROL CHASSIS

NOTE:
Parts indicated in green type cannot be supplied.


Nut
RBN-004
BM3x6
Washer
E34-004
Indicator assembly
RWX-094
Holder
Cord fixer
BM3x6
Connector assembly (B)
RWX-097
PSA3x6
BM3x6
BM3x6
PSA3x6
Insulator
E32-045
Cord fixer
Jack (TEST OSC)
RKN-027
PT3x6
Indicator (B) assembly
RWX-095

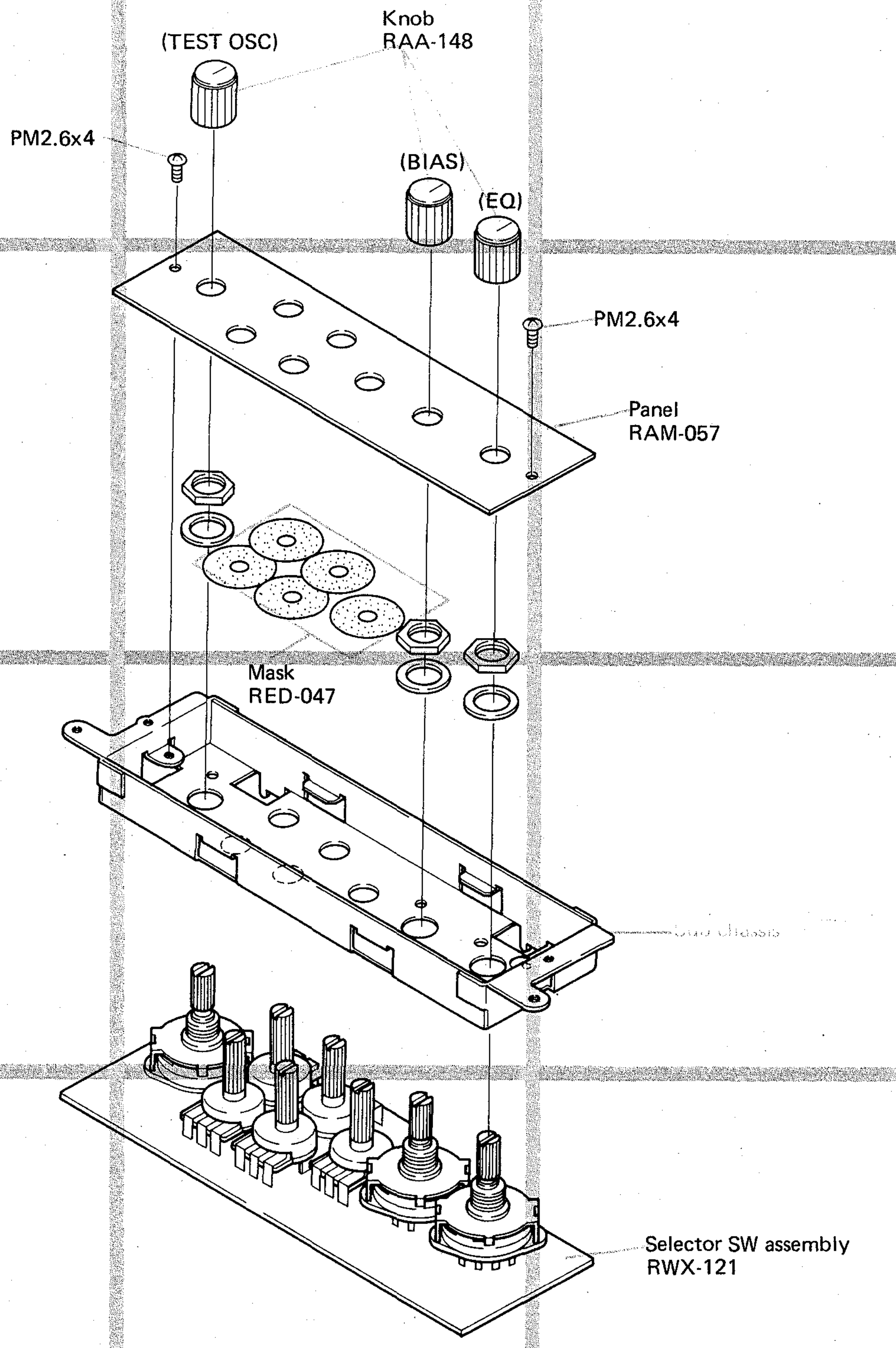
12.18 STOP BUTTON

NOTE:
Parts indicated in green type cannot be supplied.


Button
RAC-035
PT3x6
Spring
RBH-270
Microswitch
RSF-018
BM2.6x12

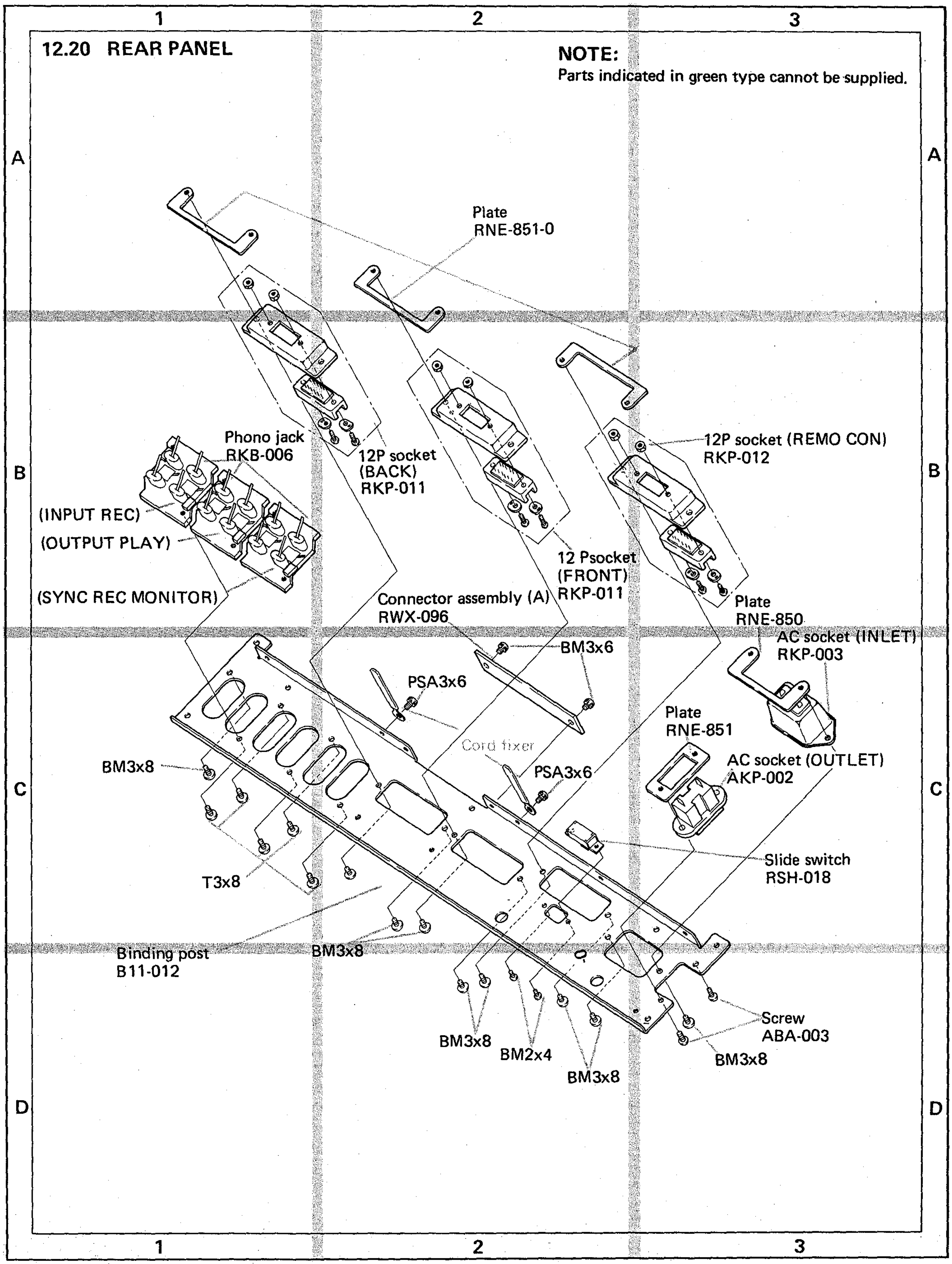
12.19 EQ BIAS CONTROL

NOTE:
Parts indicated in green type cannot be supplied.

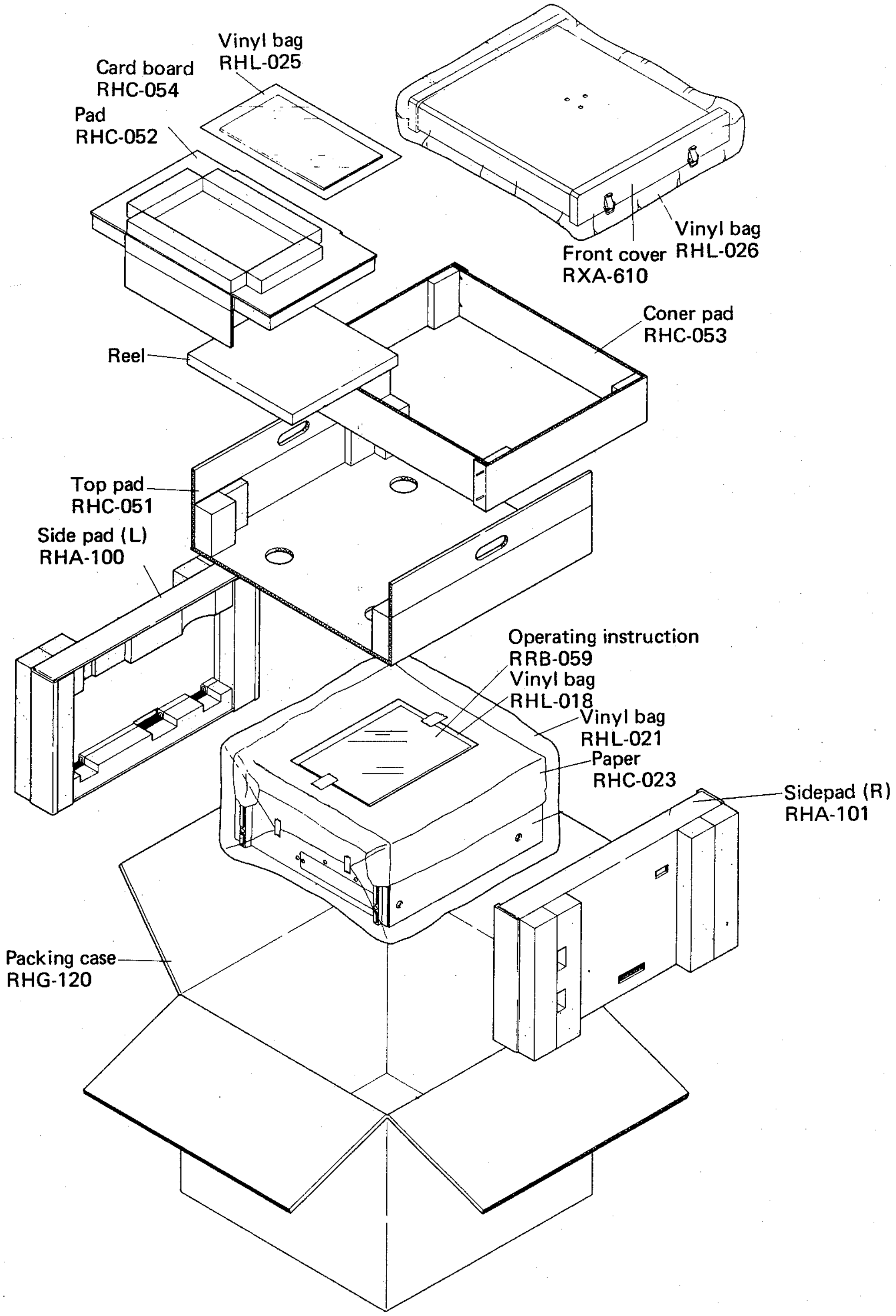

1
2
3
A
B
C
D
Knob
RAA-148
(TEST OSC)
PM2.6x4
(BIAS)
(EQ)
PM2.6x4
Panel
RAM-057
Mask
RED-047
Sub chassis
Selector SW assembly
RWX-121

12.20 REAR PANEL

NOTE:
Parts indicated in green type cannot be supplied.

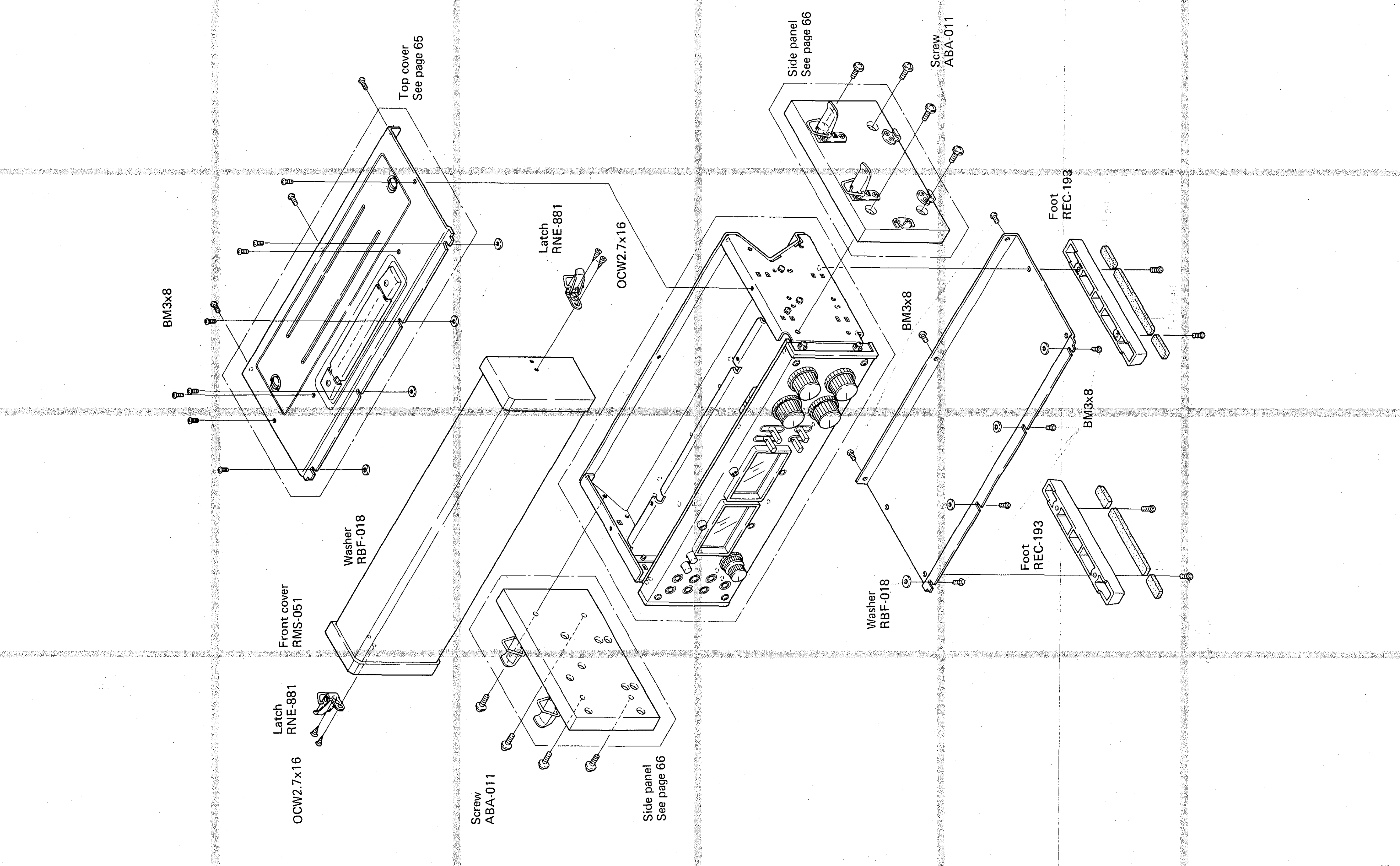

1
2
3
A
B
C
D
Plate
RNE-851-0
Phono jack
RKB-006
12P socket
(BACK)
RKP-011
12P socket (REMO CON)
RKP-012
(INPUT REC)
(OUTPUT PLAY)
(SYNC REC MONITOR)
12 Psocket
(FRONT)
RKP-011
Connector assembly (A)
RWX-096
Plate
RNE-850
AC socket (INLET)
RKP-003
BM3x6
PSA3x6
Plate
RNE-851
Cord fixer
AC socket (OUTLET)
AKP-002
BM3x8
PSA3x6
Slide switch
RSH-018
T3x8
Binding post
B11-012
BM3x8
BM3x8
BM2x4
BM3x8
Screw
ABA-003
BM3x8

12.21 RTU-11 PACKING


Vinyl bag
RHL-025
Card board
RHC-054
Pad
RHC-052
Vinyl bag
RHL-026
Front cover
RXA-610
Coner pad
RHC-053
Reel
Top pad
RHC-051
Side pad (L)
RHA-100
Operating instruction
RRB-059
Vinyl bag
RHL-018
Vinyl bag
RHL-021
Paper
RHC-023
Sidepad (R)
RHA-101
Packing case
RHG-120

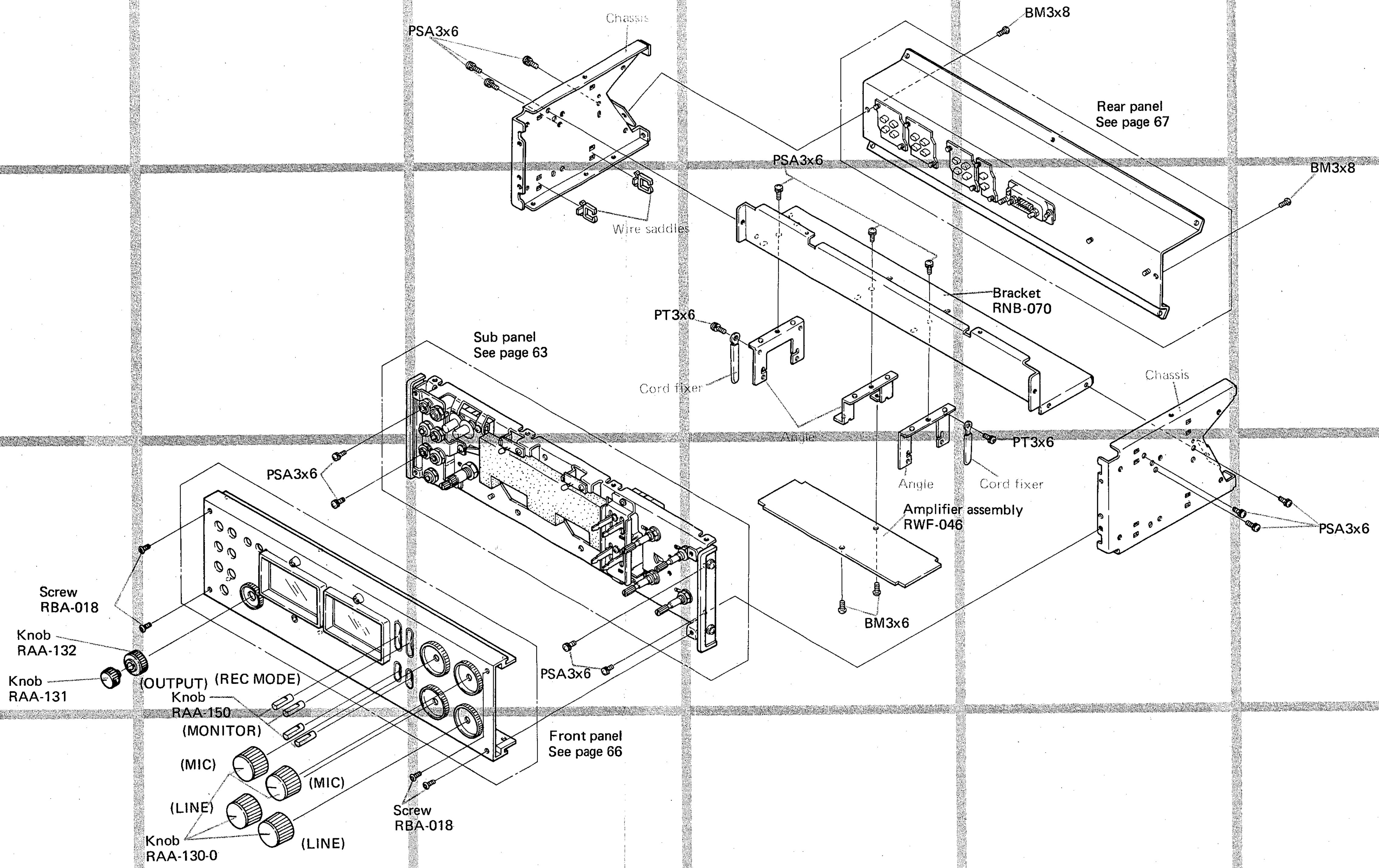
13. TAU-11 EXPLODED VIEW

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
4
5
6
A
B
C
D
Top cover
See page 65
Side panel
See page 66
Screw
ABA-011
Latch
RNE-881
OCW2.7x16
BM3x8
Foot
REC-193
BM3x8
BM3x8
Washer
RBF-018
Foot
REC-193
Front cover
RMS-051
Washer
RBF-018
Latch
RNE-881
OCW2.7x16
Screw
ABA-011
Side panel
See page 66

13.1 MAIN CHASSIS

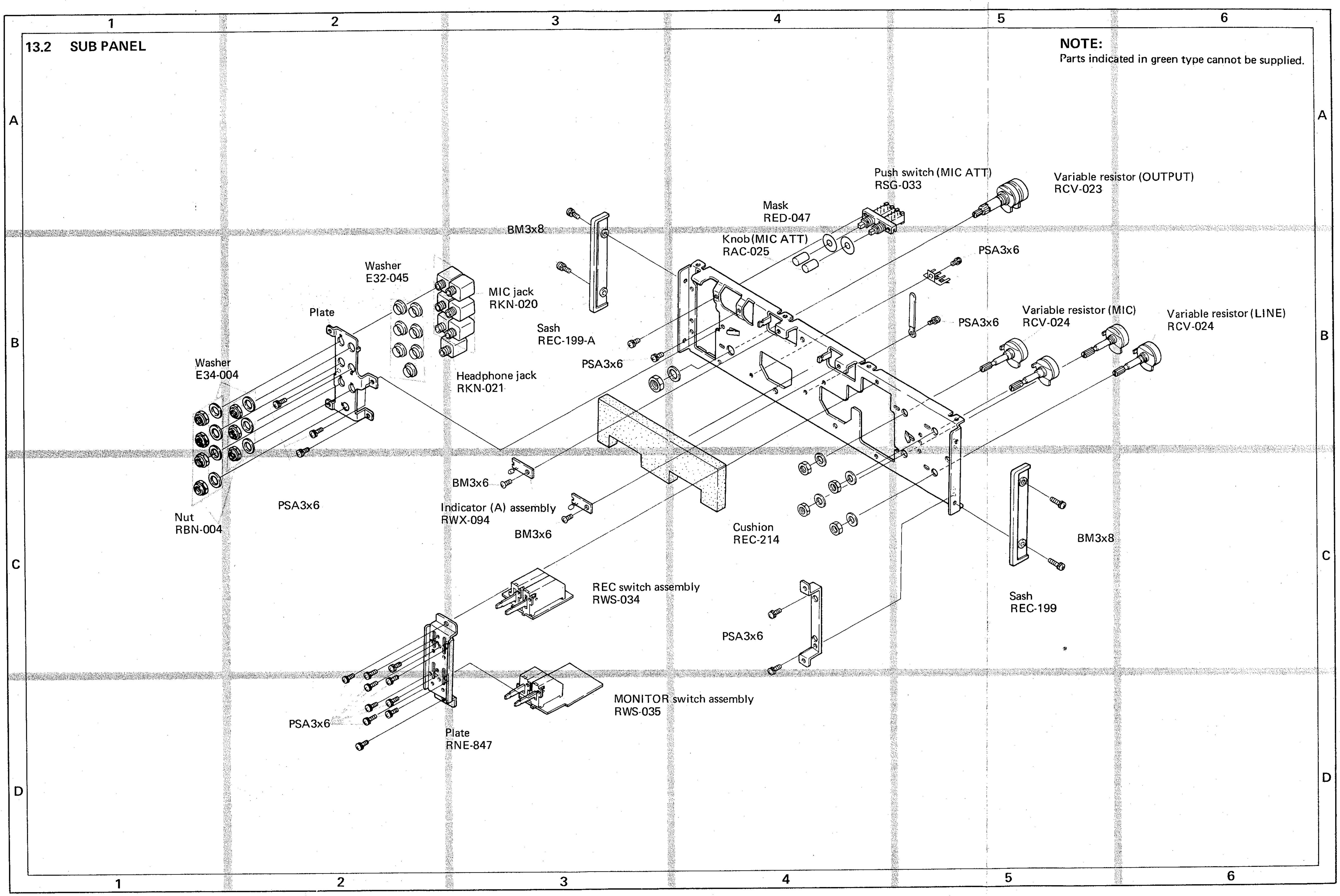
NOTE:
Parts indicated in green type cannot be supplied.



PSA3x6
Chassis
BM3x8
Rear panel
See page 67
PSA3x6
BM3x8
Wire saddles
Bracket
RNB-070
PT3x6
Sub panel
See page 63
Cord fixer
Chassis
Angle
PT3x6
PSA3x6
Angle
Cord fixer
Amplifier assembly
RWF-046
PSA3x6
Screw
RBA-018
BM3x6
Knob
RAA-132
PSA3x6
Knob
RAA-131
(OUTPUT)
(REC MODE)
Knob
RAA-150
(MONITOR)
Front panel
See page 66
(MIC)
(MIC)
Screw
RBA-018
(LINE)
Knob
RAA-130-0
(LINE)
1
2
3
4
5
6
A
B
C
D

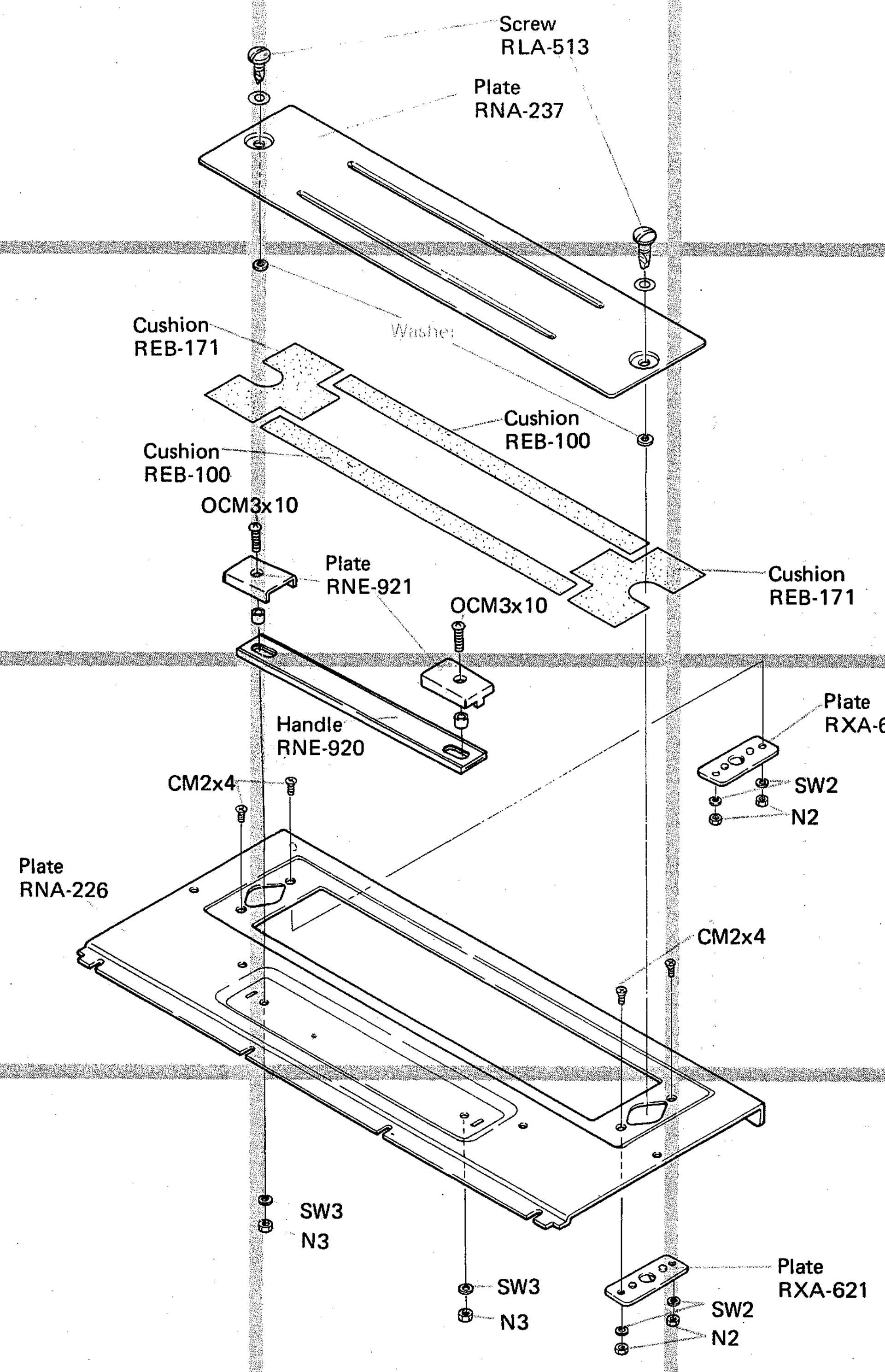
13.2 SUB PANEL

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
4
5
6
A
B
C
D
Push switch (MIC ATT)
RSG-033
Variable resistor (OUTPUT)
RCV-023
Mask
RED-047
BM3x8
Knob (MIC ATT)
RAC-025
PSA3x6
Washer
E32-045
MIC jack
RKN-020
Plate
Sash
REC-199-A
PSA3x6
Variable resistor (MIC)
RCV-024
Variable resistor (LINE)
RCV-024
Washer
E34-004
Headphone jack
RKN-021
PSA3x6
BM3x6
Indicator (A) assembly
RWX-094
PSA3x6
Nut
RBN-004
BM3x6
Cushion
REC-214
BM3x8
REC switch assembly
RWS-034
Sash
REC-199
PSA3x6
MONITOR switch assembly
RWS-035
PSA3x6
Plate
RNE-847

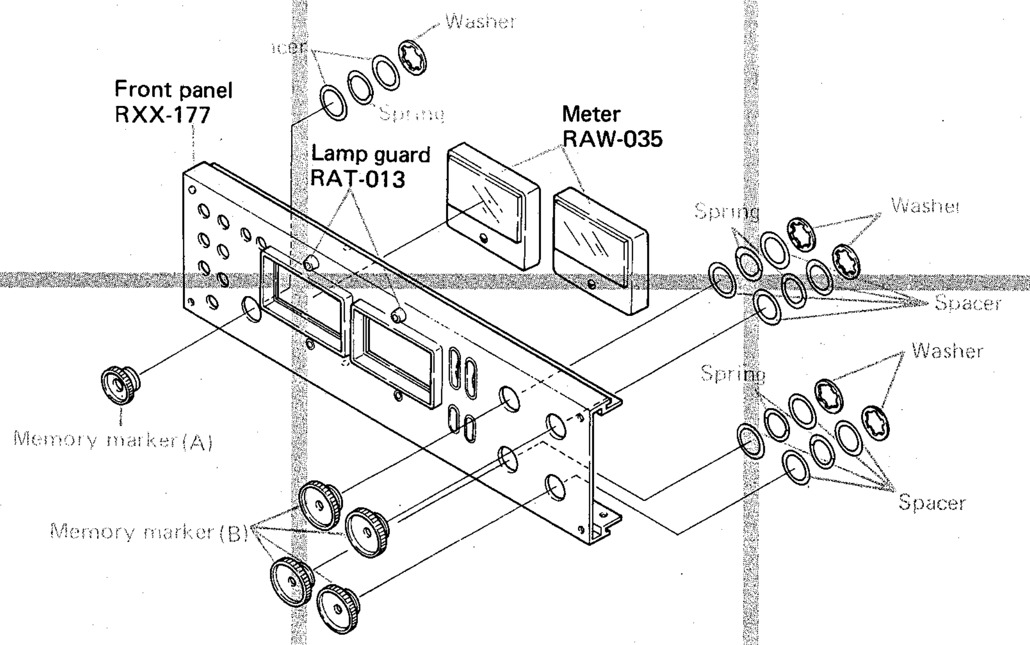
13.3 TOP COVER

NOTE:
Parts indicated in green type cannot be supplied.

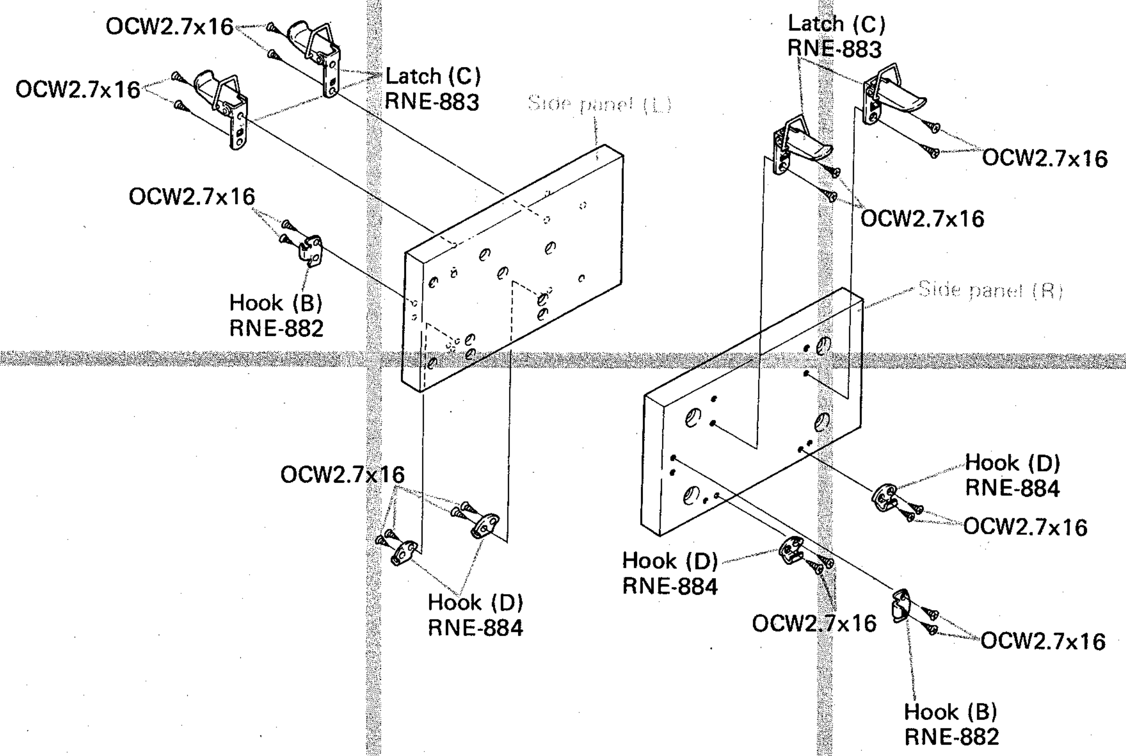

Screw
RLA-513
Plate
RNA-237
Washer
Cushion
REB-171
Cushion
REB-100
Cushion
REB-100
OCM3x10
Plate
RNE-921
OCM3x10
Cushion
REB-171
Plate
RXA-621
SW2
N2
Handle
RNE-920
CM2x4
Plate
RNA-226
CM2x4
SW3
N3
SW3
N3
Plate
RXA-621
SW2
N2

13.4 FRONT PANEL

NOTE:
Parts indicated in green type cannot be supplied.

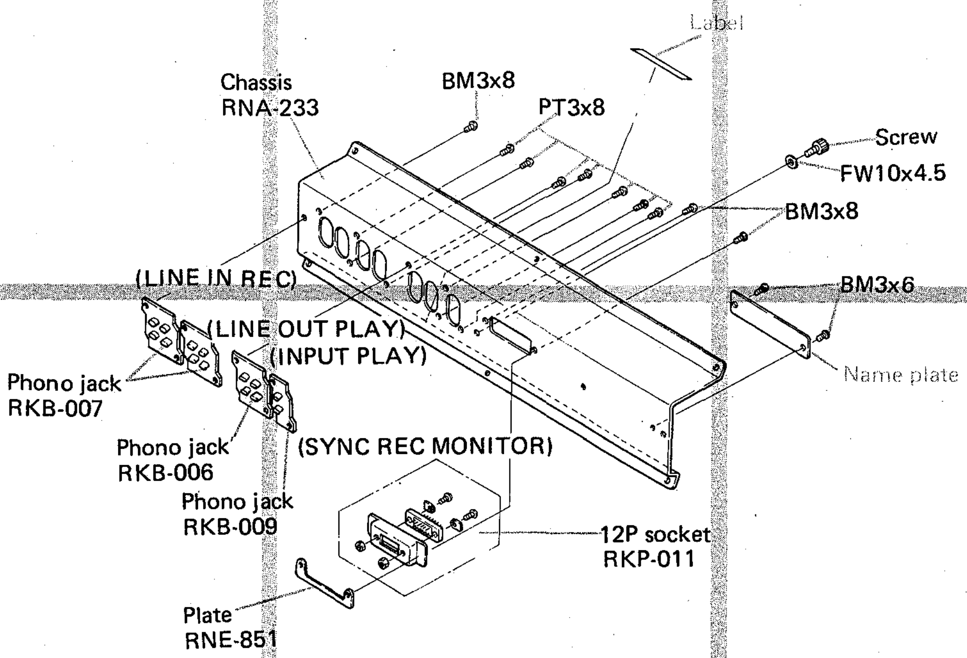

Washer
acer
Spring
Front panel
RXX-177
Lamp guard
RAT-013
Meter
RAW-035
Spring
Washer
Spacer
Washer
Spring
Spacer
Memory marker (A)
Memory marker (B)

13.5 SIDE PANEL

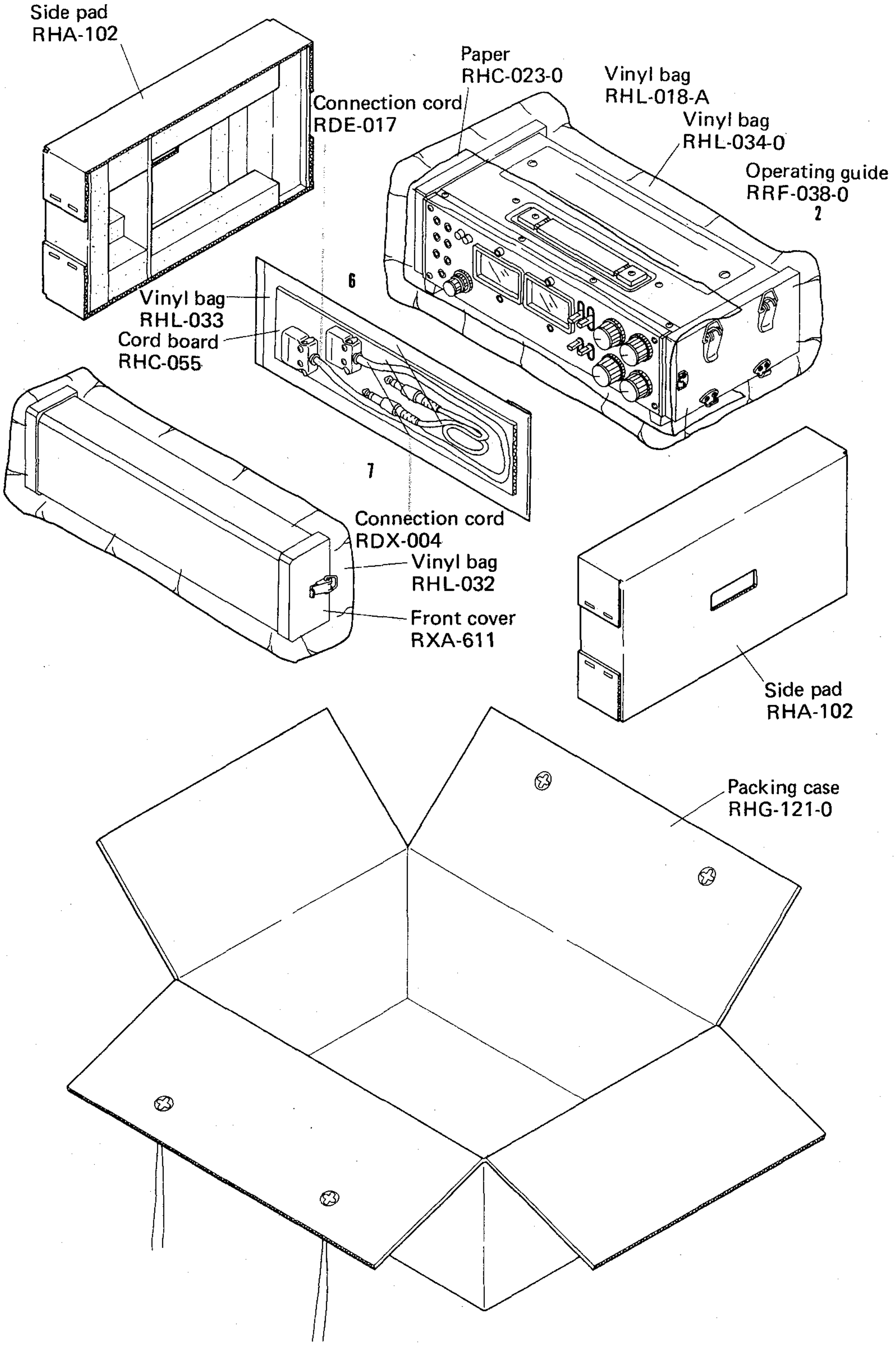

OCW2.7x16
OCW2.7x16
Latch (C)
RNE-883
Side panel (L)
OCW2.7x16
Hook (B)
RNE-882
OCW2.7x16
Hook (D)
RNE-884
Latch (C)
RNE-883
OCW2.7x16
OCW2.7x16
Side panel (R)
Hook (D)
RNE-884
OCW2.7x16
Hook (D)
RNE-884
OCW2.7x16
OCW2.7x16
Hook (B)
RNE-882

13.6 REAR PANEL

NOTE:
Parts indicated in green type cannot be supplied.

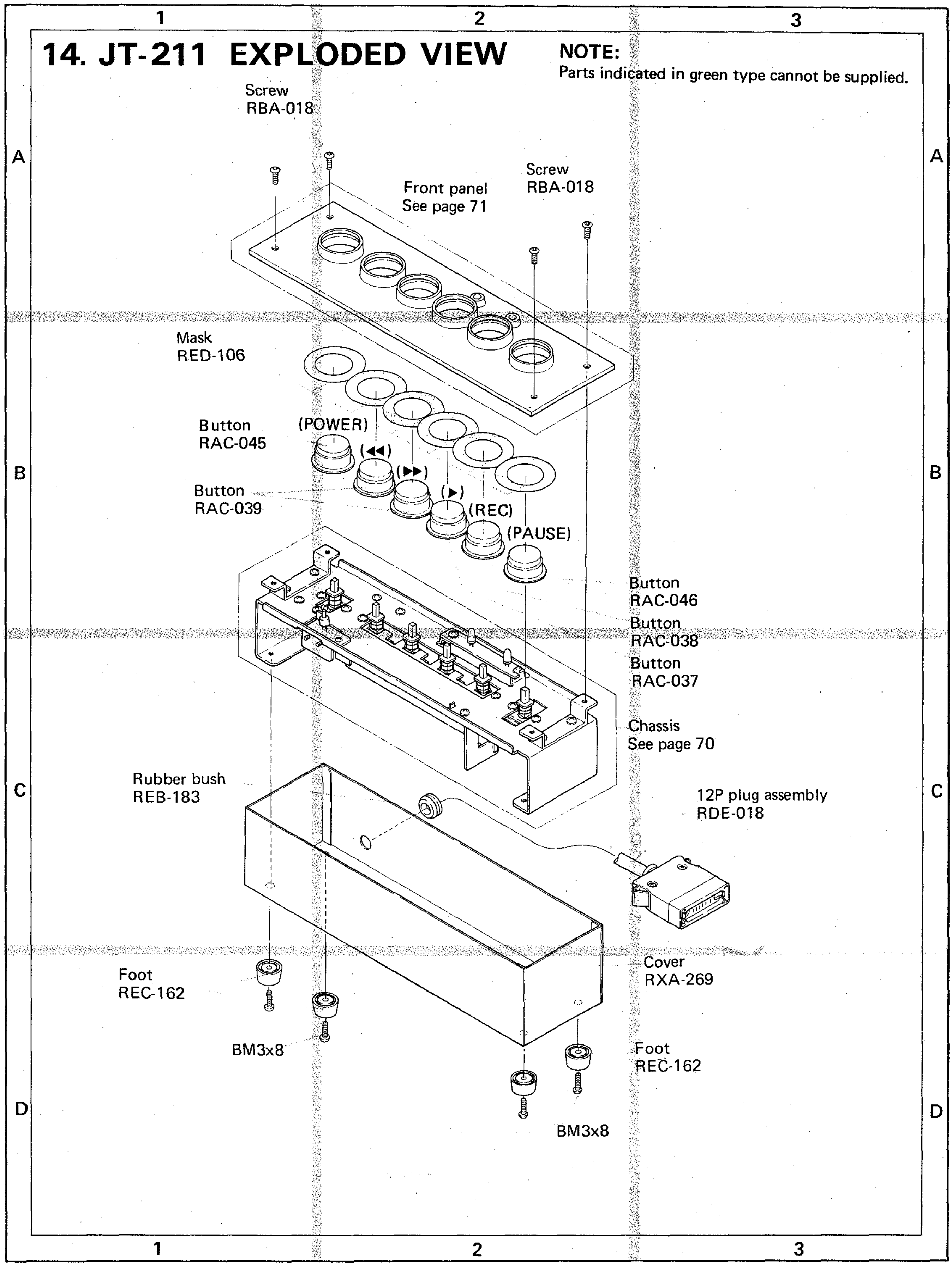

Label
Chassis
RNA-233
BM3x8
PT3x8
Screw
FW10x4.5
BM3x8
BM3x6
Name plate
(LINE IN REC)
(LINE OUT PLAY)
(INPUT PLAY)
Phono jack
RKB-007
Phono jack
RKB-006
(SYNC REC MONITOR)
Phono jack
RKB-009
12P socket
RKP-011
Plate
RNE-851

13.7 TAU-11 PACKING


Side pad
RHA-102
Paper
RHC-023-0
Vinyl bag
RHL-018-A
Connection cord
RDE-017
Vinyl bag
RHL-034-0
Operating guide
RRF-038-0
2
6
Vinyl bag
RHL-033
Cord board
RHC-055
7
Connection cord
RDX-004
Vinyl bag
RHL-032
Front cover
RXA-611
Side pad
RHA-102
Packing case
RHG-121-0

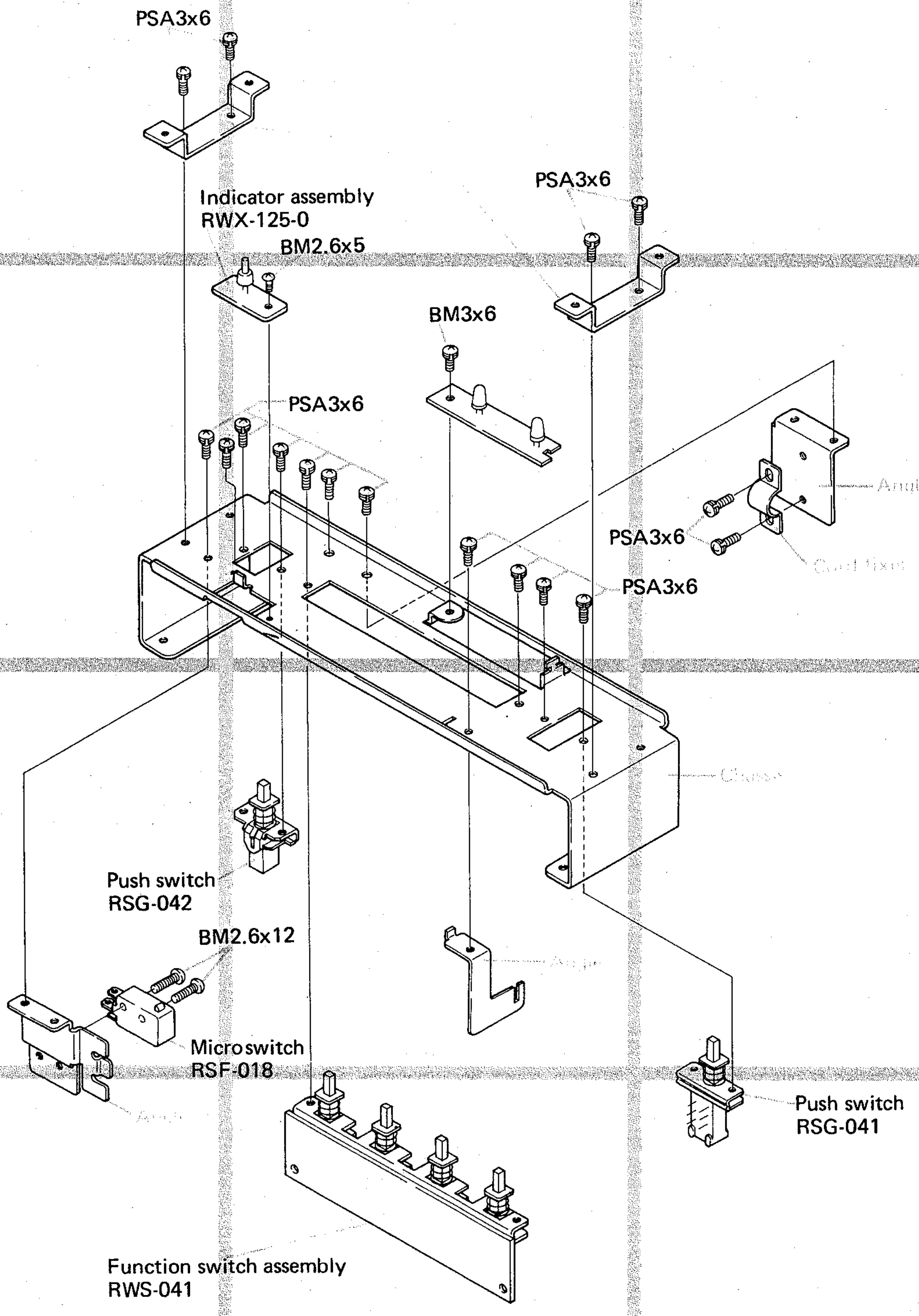
14. JT-211 EXPLODED VIEW

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
A
B
C
D
Screw
RBA-018
Front panel
See page 71
Screw
RBA-018
Mask
RED-106
Button
RAC-045
(POWER)
(◀◀)
(▶▶)
(▶)
(REC)
(PAUSE)
Button
RAC-039
Button
RAC-046
Button
RAC-038
Button
RAC-037
Chassis
See page 70
Rubber bush
REB-183
12P plug assembly
RDE-018
Cover
RXA-269
Foot
REC-162
BM3x8
Foot
REC-162
BM3x8

14.1 CHASSIS

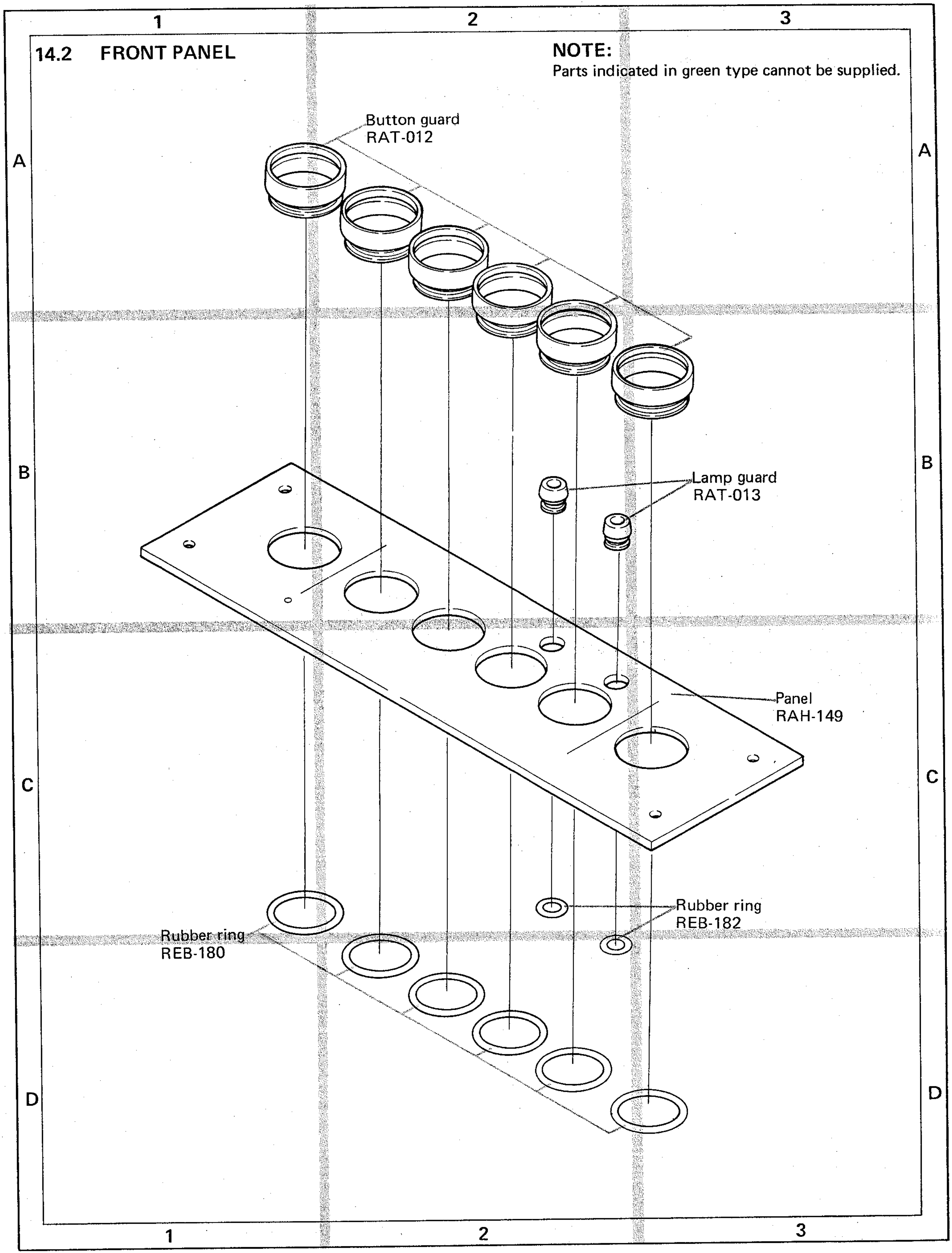
NOTE:
Parts indicated in green type cannot be supplied.



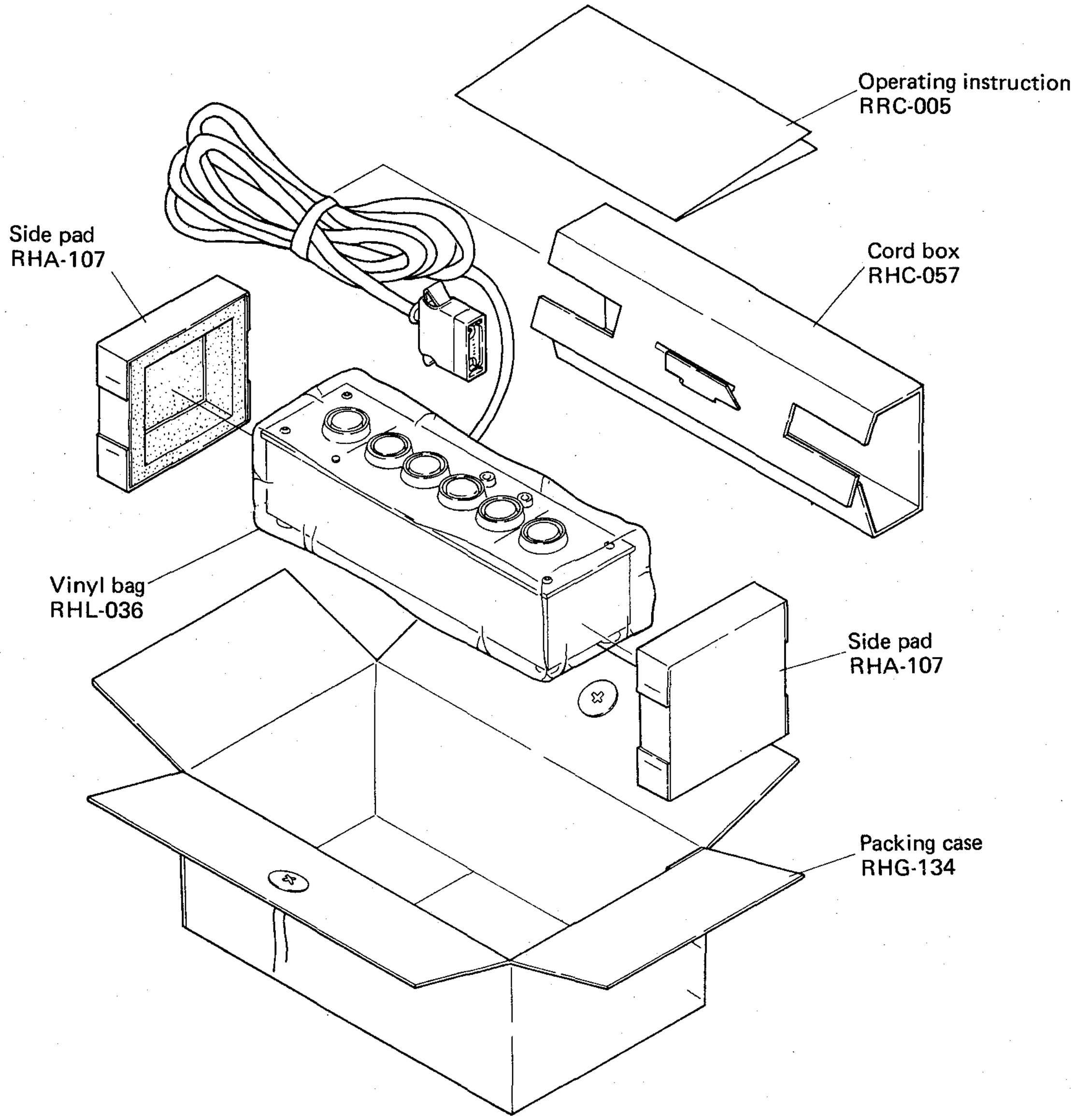
1
2
3
A
B
C
D
PSA3x6
Indicator assembly
RWX-125-0
BM2.6x5
PSA3x6
BM3x6
PSA3x6
Angle
PSA3x6
Cord fixer
PSA3x6
Chassis
Push switch
RSG-042
BM2.6x12
Angle
Microswitch
RSF-018
Angle
Push switch
RSG-041
Function switch assembly
RWS-041

14.2 FRONT PANEL

NOTE:
Parts indicated in green type cannot be supplied.

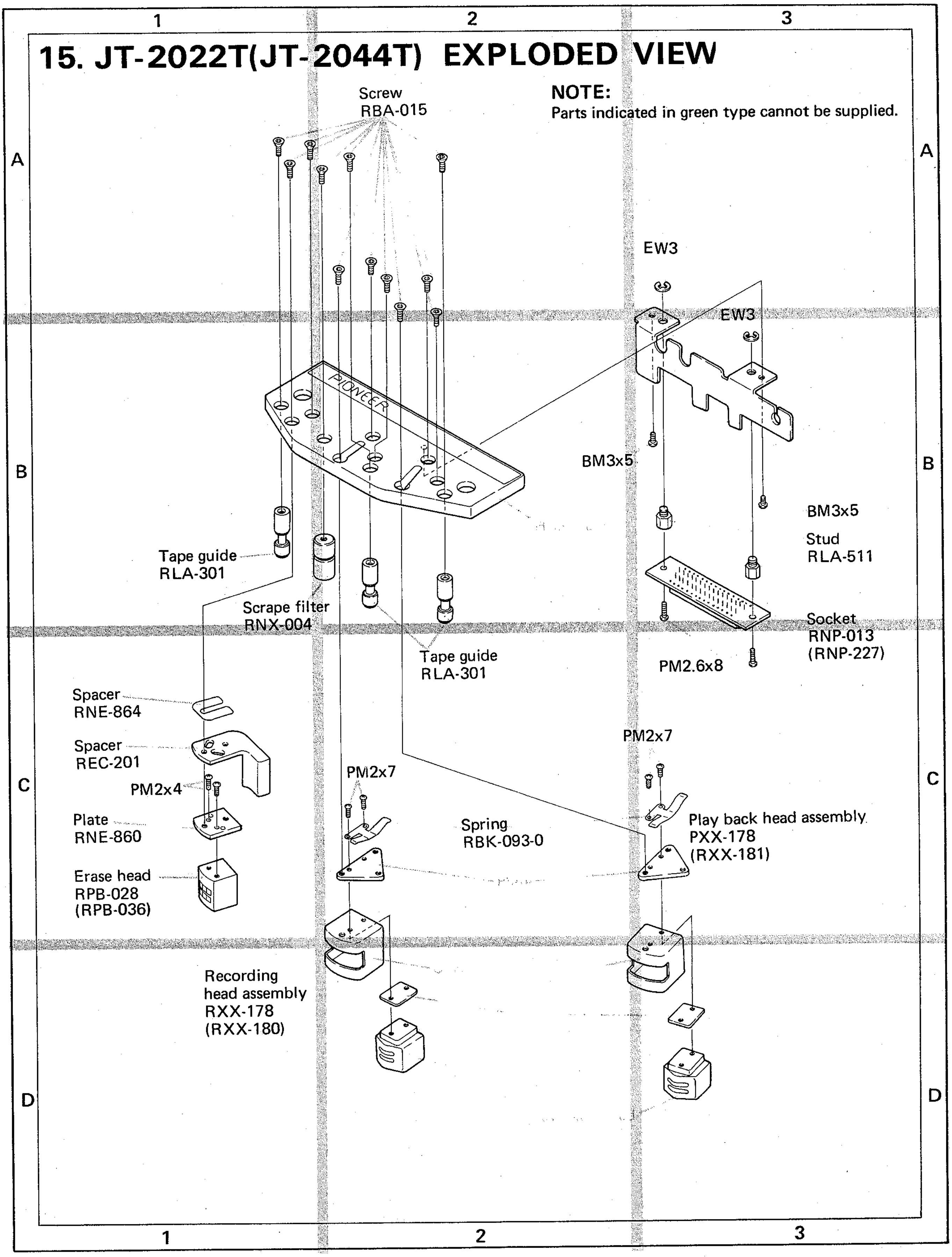

1
2
3
A
B
C
D
Button guard
RAT-012
Lamp guard
RAT-013
Panel
RAH-149
Rubber ring
REB-182
Rubber ring
REB-180

14.3 JT-211 PACKING

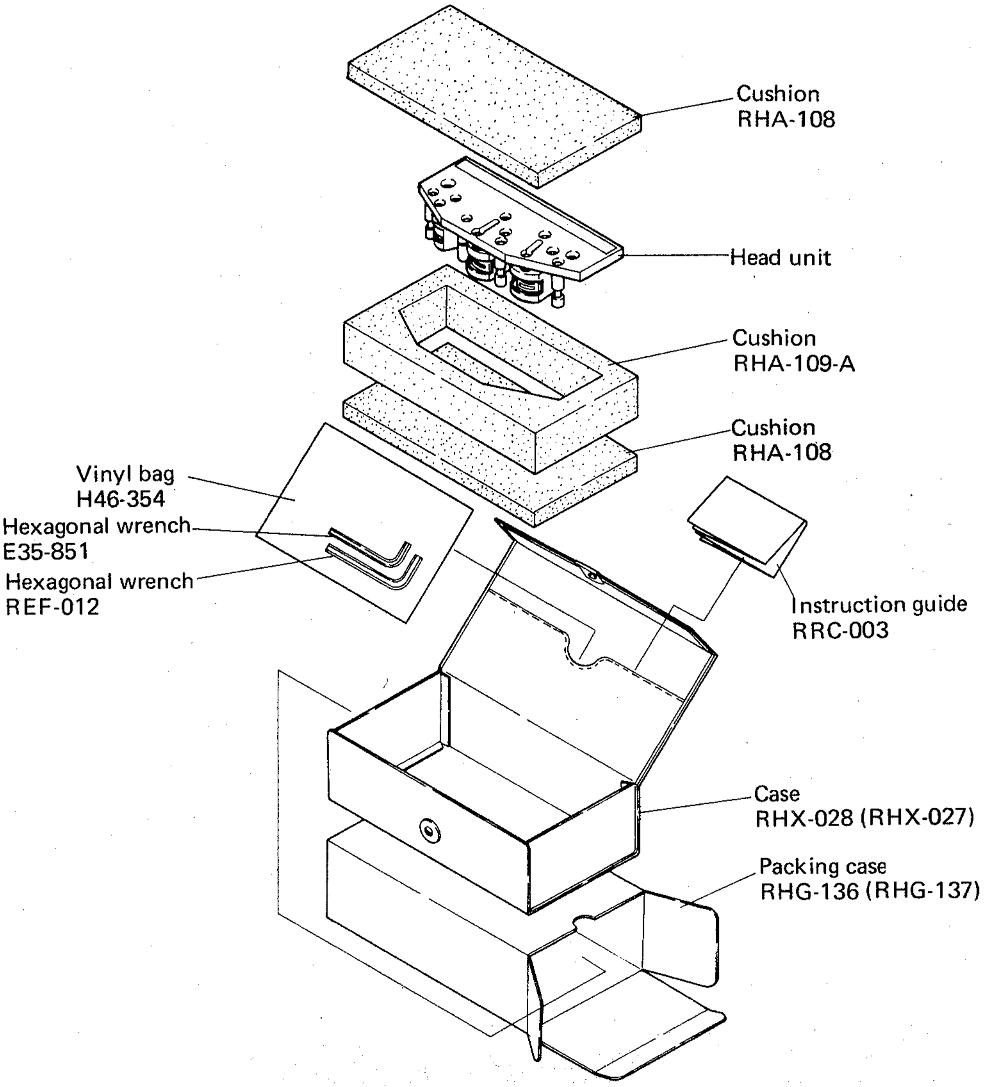

Operating instruction
RRC-005
Side pad
RHA-107
Cord box
RHC-057
Vinyl bag
RHL-036
Side pad
RHA-107
Packing case
RHG-134

15. JT-2022T(JT-2044T) EXPLODED VIEW

NOTE:
Parts indicated in green type cannot be supplied.


1
2
3
A
B
C
D
Screw
RBA-015
EW3
EW3
BM3x5
BM3x5
Stud
RLA-511
Socket
RNP-013
(RNP-227)
PM2.6x8
Tape guide
RLA-301
Scrape filter
RNX-004
Tape guide
RLA-301
Spacer
RNE-864
Spacer
REC-201
PM2x4
Plate
RNE-860
Erase head
RPB-028
(RPB-036)
PM2x7
Spring
RBK-093-0
PM2x7
Play back head assembly
PXX-178
(RXX-181)
Recording
head assembly
RXX-178
(RXX-180)
PIONEER

15.1 JT-2022T (JT-2044T) PACKING


Cushion
RHA-108
Head unit
Cushion
RHA-109-A
Cushion
RHA-108
Vinyl bag
H46-354
Hexagonal wrench
E35-851
Hexagonal wrench
REF-012
Instruction guide
RRC-003
Case
RHX-028 (RHX-027)
Packing case
RHG-136 (RHG-137)

16.3 MISCELLANEOUS PARTS

SEMICONDUCTORS

Symbol	Description	Part No.
D1	Diode	W06B
D2	Diode	W06B
D3	Diode	W06B

SWITCHES

Symbol	Description	Part No.
S1	Microswitch (STOP)	RSF-018
S2	Lever switch (PAUSE)	RSK-028
S4	Slide switch (REMOTE)	RSH-018
S1001-1	Microswitch (SHUT OFF)	RSF-013
S1001-2	Microswitch (SHUT OFF) TV type	RSF-016

RESISTORS

Symbol	Description			Part No.
R1	Wire wound	2.2k	30W	RCN-025
R2	Wire wound	350	30W	RCN-024
R3	Carbon film	10k		RD¼PS 103J
R4	Carbon film	1.8k		RD¼PS 182J

CAPACITORS

Symbol	Description			Part No.
C1	Electrolytic	1000	80V	RCH-025
C2	MP	0.5+2	250V	RCL-016
C3	MP	0.5+4	250V	RCL-010
C4	MP	0.5+4	250V	RCL-010
C5	Ceramic	0.01	1.4kV	C43-003

SOLENOIDS

Symbol	Description	Part No.
SL1	Brake solenoid	RXP-020
SL2	Brake solenoid	RXP-020
SL3	Pinch solenoid	RXP-011

OTHERS

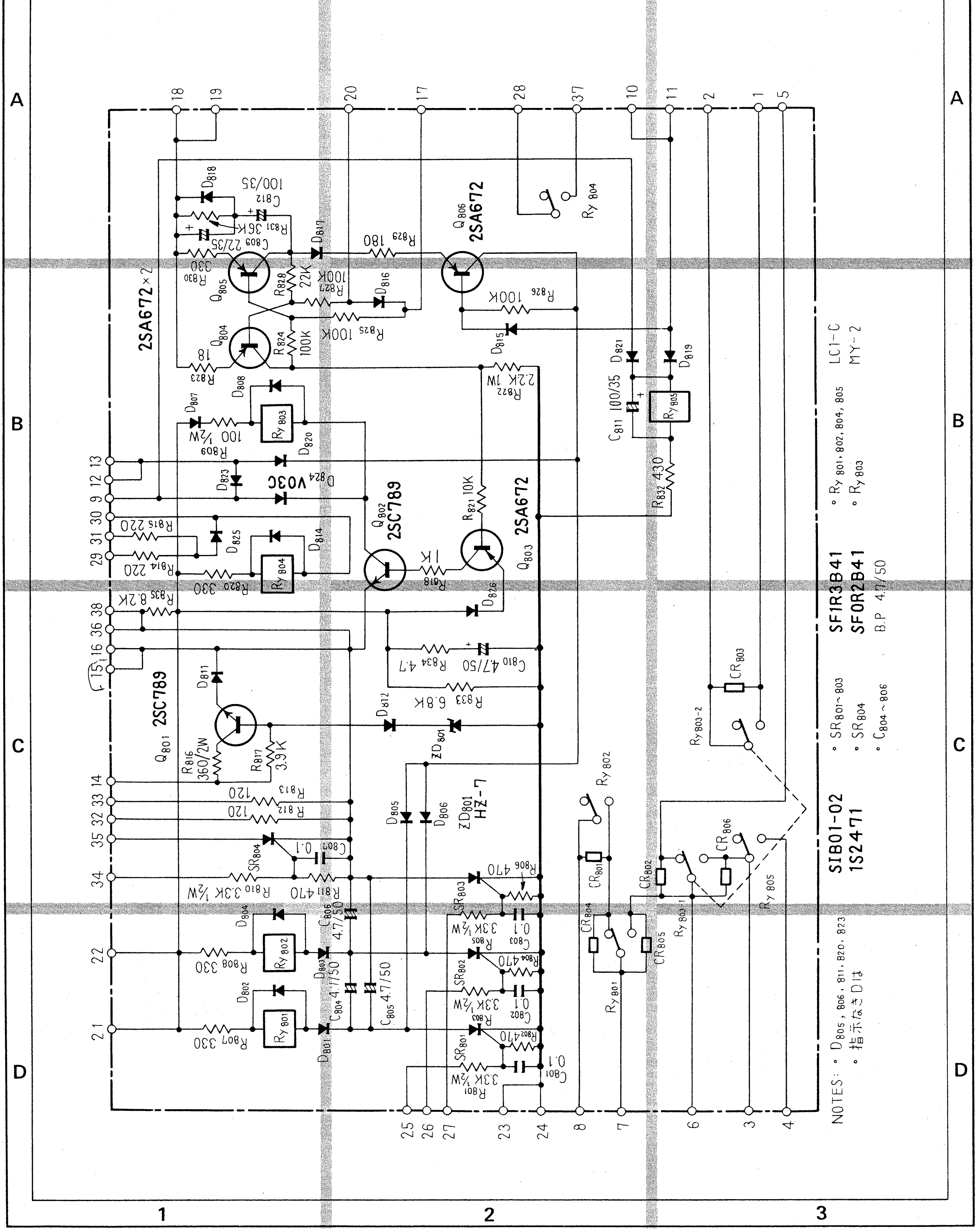
Symbol	Description	Part No.
	Control assembly	RWG-050
	REC/PB amplifier assembly	RWF-044
	Power supply & O.S.C. assembly	RWR-031
	Syncro amplifier assembly	RWF-052
	Power SW assembly	RWS-033
	Test O.S.C. assembly	RWA-024
	Function switch assembly	RWS-040
	Selector switch assembly	RWX-121

NOTE:

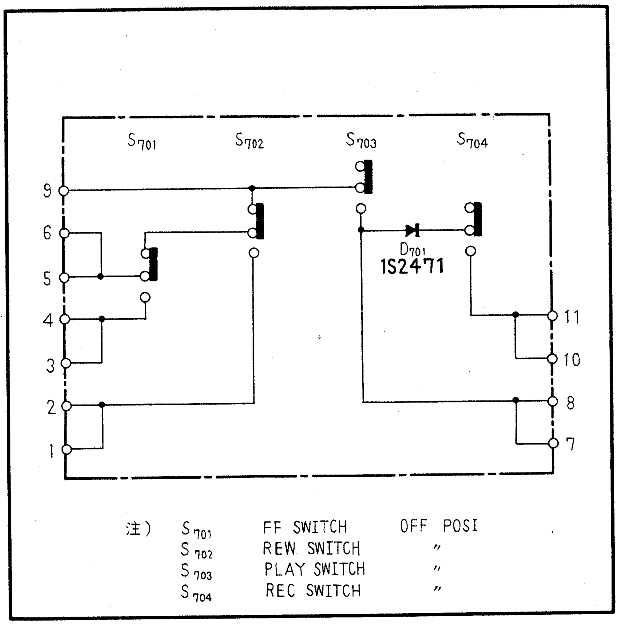
- *Capacitors: in μF unless otherwise noted p:pF*
- *Resistors: in Ω, ¼W unless otherwise noted k:kΩ, M:MΩ*

Symbol	Description	Part No.
	Indicator A assembly	RWX-094
	Indicator B assembly	RWX-095
	Shut off switch assembly	RWX-047
	Motor fuse assembly	RWX-048
	Capstan motor	RXM-020
	Take-up motor	RXM-015
	Supply motor	RXM-015
	Power transformer	RTT-084
	Capacitor cover (A) C5	REC-150
	Connector A assembly	RWX-096
	Connector B assembly	RWX-097
	Plug assembly	RWX-093
	12P socket (FRONT)	RKP-011
	12P socket (BACK)	RKP-011
	12P socket (REMO CON)	RKP-012

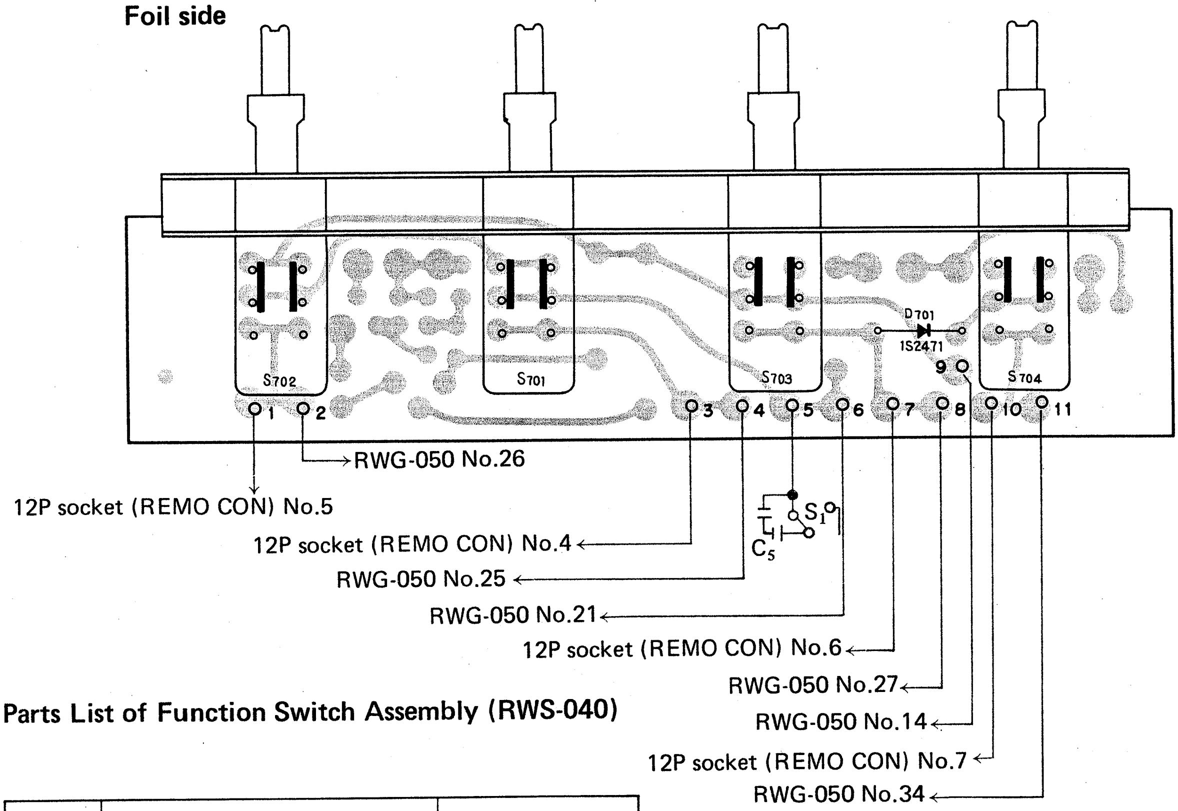
16.4 CONTROL ASSEMBLY (RWG-050)


1
2
3
A
B
C
D
18
19
20
17
28
37
10
11
2
1
5
13
12
9
30
31
29
38
36
16
15
14
33
32
35
34
22
21
25
26
27
23
24
8
7
6
3
4
2SA672×2
Q804
Q805
Q806 2SA672
Q802 2SC789
Q803 2SA672
Q801 2SC789
D818
C812 100/35
R831 36K
C809 22/35
R830 330
D817
R829 180
R828 22K
R827 100K
D816
R826 100K
R824 100K
R825 100K
R823 18
D815
R822 2.2K 1W
D808
D807
R809 100 1/2W
Ry803
D820
D823
D824 V03C
R821 10K
R815 220
D825
D814
R814 220
Ry804
R820 330
R818 1K
D826
R835 8.2K
C810 4.7/50
R834 4.7
R833 6.8K
D811
D812
ZD801
R816 360/2W
R817 3.9K
R813 120
R812 120
ZD801 HZ-7
D805
D806
SR804
C807 0.1
R810 3.3K 1/2W
R811 470
C806 4.7/50
D804
R806 470
SR803
R805 3.3K 1/2W
C803 0.1
Ry802
D803
R808 330
C805 4.7/50
C804 4.7/50
R804 470
SR802
R803 3.3K 1/2W
C802 0.1
D802
Ry801
D801
R807 330
R802 470
SR801
R801 3.3K 1/2W
C801 0.1
Ry804
D821
D819
C811 100/35
Ry805
R832 430
CR803
Ry803-2
Ry802
CR801
CR802
CR806
CR804
CR805
Ry801
Ry803-1
Ry805
LC1-C
MY-2
• Ry801, 802, 804, 805
• Ry803
SF1R3B41
SF0R2B41
B.P 4.7/50
• SR801~803
• SR804
• C804~806
SIB01-02
1S2471
NOTES: • D805, 806, 811, 820, 823
• 指示なきDは

16.7 FUNCTION SWITCH ASSEMBLY (RWS-040)


S701
S702
S703
S704
9
6
5
4
3
2
1
11
10
8
7
D701
1S2471
注) S701 FF SWITCH OFF POSI
S702 REW SWITCH ″
S703 PLAY SWITCH ″
S704 REC SWITCH ″

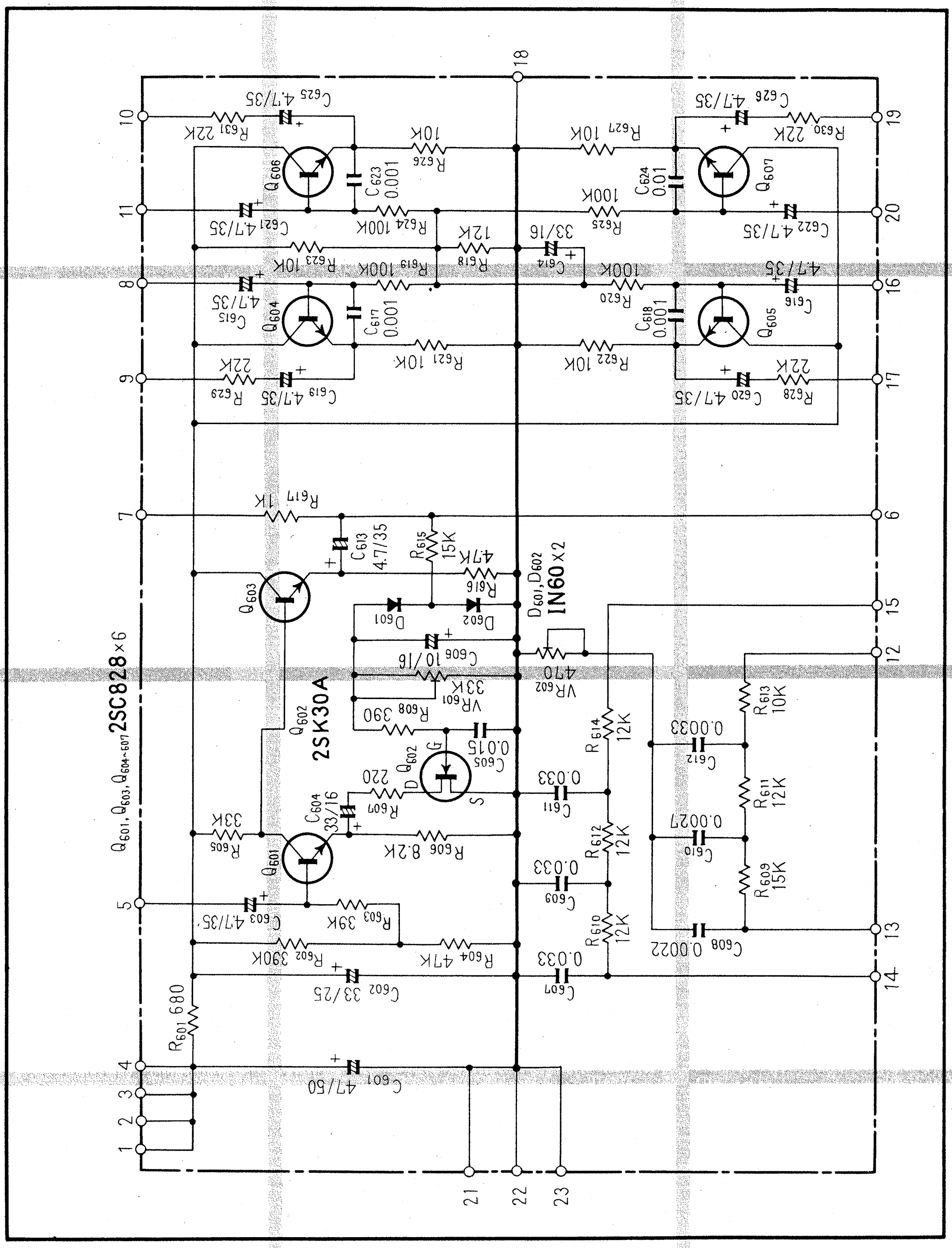
Foil side

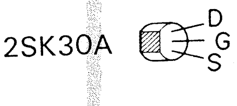

S702
S701
S703
S704
D701
1S2471
1
2
3
4
5
6
7
8
9
10
11
S1
C5
RWG-050 No.26
12P socket (REMO CON) No.5
12P socket (REMO CON) No.4
RWG-050 No.25
RWG-050 No.21
12P socket (REMO CON) No.6
RWG-050 No.27
RWG-050 No.14
12P socket (REMO CON) No.7
RWG-050 No.34

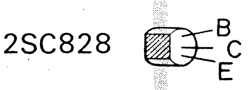
Parts List of Function Switch Assembly (RWS-040)

Symbol	Description	Part No.
D701	Diode	1S2471
	Switch	RSG-032

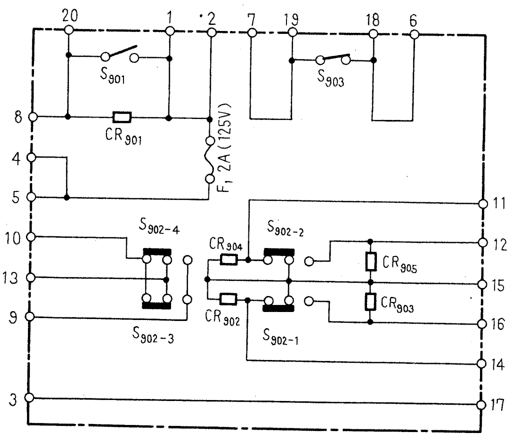
16.8 TEST O.S.C. ASSEMBLY (RWA-024)


1
2
3
A
B
C
D
18
10
11
8
9
19
20
16
17
7
6
15
12
13
14
5
4
3
2
1
21
22
23
R631 22K
C625 4.7/35
Q606
C623 0.001
R626 10K
R627 10K
C626 4.7/35
R630 22K
Q607
C624 0.01
R625 100K
C622 4.7/35
R624 100K
C621 4.7/35
R618 12K
C614 33/16
R623 10K
R619 100K
R620 100K
C616 4.7/35
C615 4.7/35
Q604
C617 0.001
C618 0.001
Q605
R621 10K
R622 10K
R629 22K
C619 4.7/35
C620 4.7/35
R628 22K
R617 1K
C613 4.7/35
R615 15K
R616 4.7K
Q603
D601
D602
D601, D602 1N60×2
C606 10/16
VR601 33K
VR602 470
R608 390
C605 0.015
Q602 2SK30A
G
D
S
R607 220
C604 33/16
R605 33K
Q601
R606 8.2K
R603 39K
C603 4.7/35
R602 390K
R604 47K
C602 33/25
R601 680
C601 47/50
R614 12K
R612 12K
R610 12K
C611 0.033
C609 0.033
C607 0.033
R613 10K
C612 0.0033
R611 12K
C610 0.0027
R609 15K
C608 0.0022
Q601, Q603, Q604~607 2SC828×6



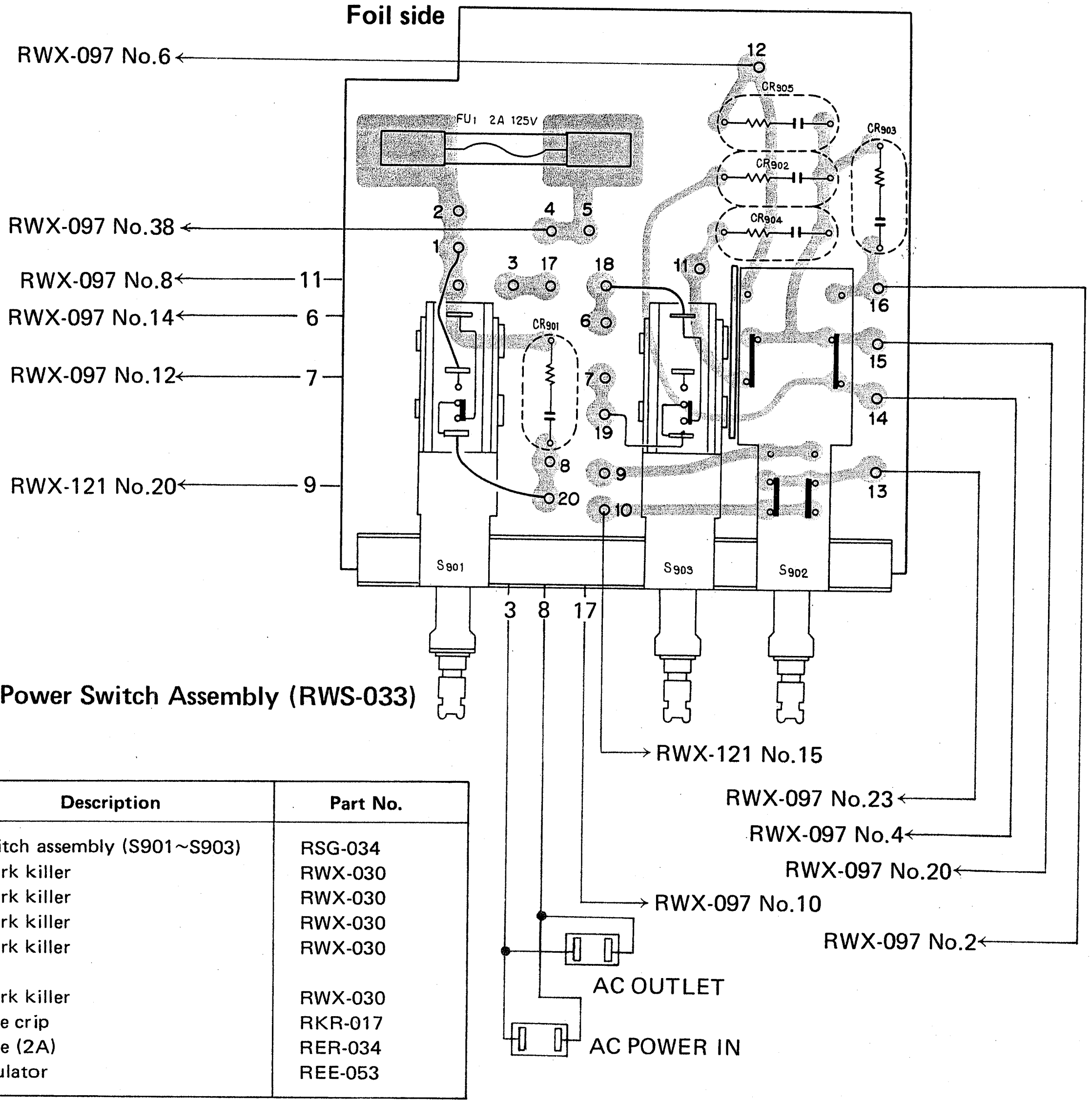


16.11 POWER SWITCH ASSEMBLY (RWS-033)


20
1
2
7
19
18
6
S901
S903
8
CR901
F1 2A (125V)
4
5
11
10
S902-4
CR904
S902-2
12
13
CR905
15
9
CR902
CR903
16
S902-3
S902-1
14
3
17

$CR_{901\sim905}$ . . . Spark killer
S_{901} . . . . Power SW (OFF)
S_{902} . . . . Speed selector SW (HIGH)
S_{903} . . . . Reel switch (10 in.)

Foil side

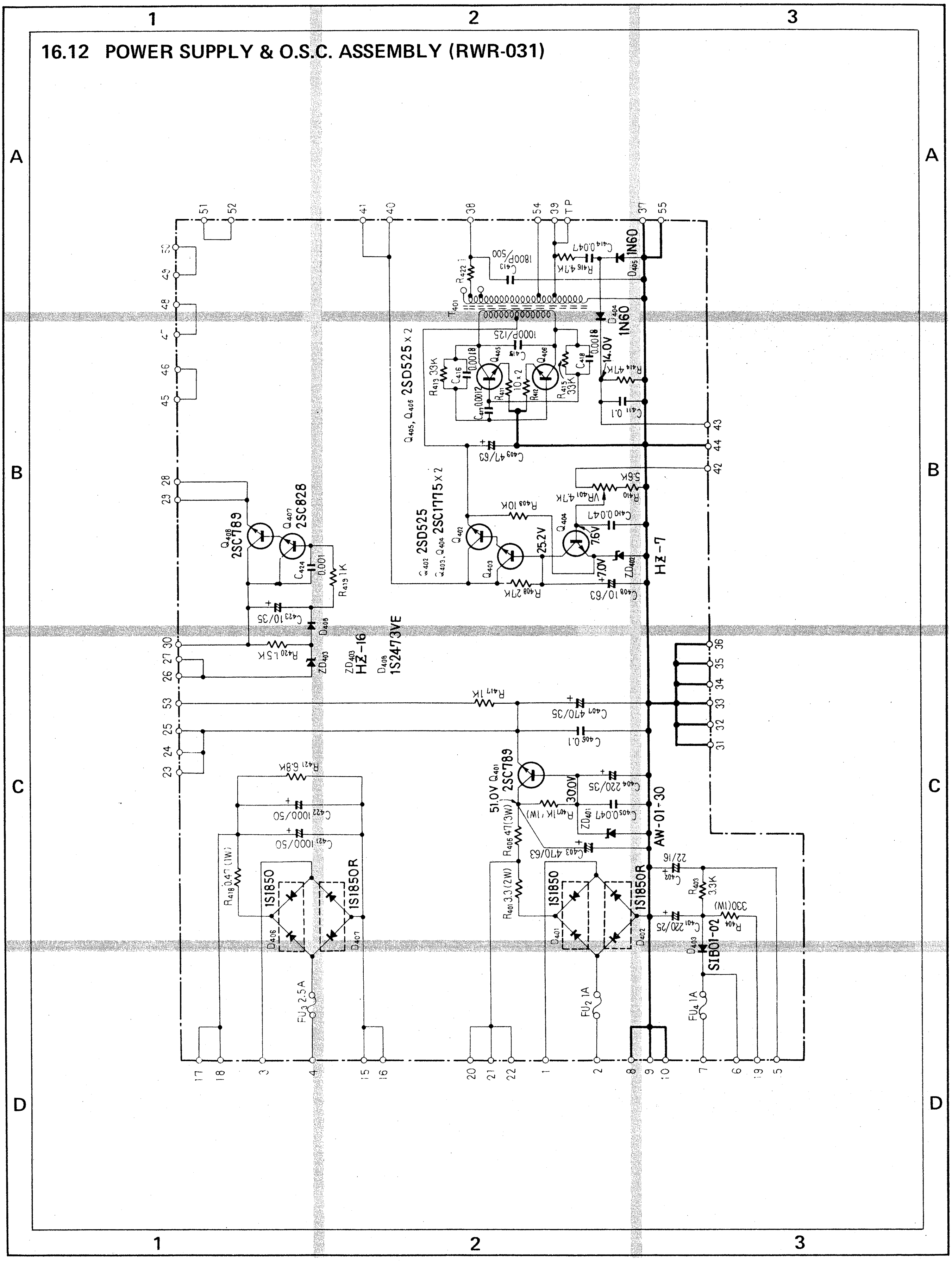

RWX-097 No.6
RWX-097 No.38
RWX-097 No.8
RWX-097 No.14
RWX-097 No.12
RWX-121 No.20
11
6
7
9
FU1 2A 125V
CR905
CR902
CR904
CR903
CR901
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
S901
S903
S902
3 8 17
RWX-121 No.15
RWX-097 No.23
RWX-097 No.4
RWX-097 No.20
RWX-097 No.10
RWX-097 No.2
AC OUTLET
AC POWER IN

Parts List of Power Switch Assembly (RWS-033)

OTHERS

Symbol	Description	Part No.
	Switch assembly (S901~S903)	RSG-034
CR901	Spark killer	RWX-030
CR902	Spark killer	RWX-030
CR903	Spark killer	RWX-030
CR904	Spark killer	RWX-030
CR905	Spark killer	RWX-030
	Fuse crip	RKR-017
	Fuse (2A)	RER-034
	Insulator	REE-053

16.12 POWER SUPPLY & O.S.C. ASSEMBLY (RWR-031)


1
2
3
A
B
C
D
51
52
50
49
48
47
46
45
28
23
30
27
26
53
25
24
23
41
40
38
54
39
TP
37
55
43
44
42
36
35
34
33
32
31
17
18
3
4
15
16
20
21
22
1
2
8
9
10
7
6
19
5
Q408 2SC789
Q407 2SC828
C424 0.001
R419 1K
C423 10/35
D405
R420 1.5K
ZD403
ZD403 HZ-16
D405 1S2473VE
Q402 2SD525
Q403, Q404 2SC1775 x 2
Q402
Q403
R409 10K
25.2V
Q404
7.6V
+7.0V
ZD402
HZ-7
R408 27K
C408 10/63
C410 0.047
VR401 4.7K
R410 5.6K
C409 47/63
Q405, Q406 2SD525 x 2
R413 33K
C416 0.0018
C417 0.0012
R411
R412
10 x 2
Q405
Q406
C415 1000P/125
R415 33K
C418 0.0018
14.0V
R414 47K
C411 0.1
D404 1N60
T401
R422 1
C413 1800P/500
R416 4.7K
C414 0.047
D405 1N60
R417 1K
C407 470/35
C406 0.1
51.0V
Q401 2SC789
C404 220/35
300V
R407 1K (1W)
C405 0.047
ZD401
AW-01-30
R406 47 (3W)
C403 470/63
R401 3.3 (2W)
1S1850
1S1850R
D401
D402
C402 22/16
R403 3.3K
C401 220/25
R404 330 (1W)
D403 SIB01-02
FU4 1A
FU2 1A
R421 6.8K
C422 1000/50
C421 1000/50
R418 0.47 (1W)
1S1850
1S1850R
D406
D407
FU3 2.5A

19.4 PINCH PRESSURE

When replacing pinch roller solenoid or pinch roller, confirm pinch pressure by the following steps.

1. With deck vertical, set tension selector switch to 10-in reel position.
2. With POWER and shut off switches ON, set for playback mode.
3. At this time, check that space B in Fig. 10 is 1 mm.
4. If not, loosen 3 screws and adjust by moving pinch solenoid bracket.
5. Install Scotch No. 111 tape (or equivalent) with 10-in metal reel. Operate fast forward until approximately the same amount of tape is on both reels.
6. With tape speed at 19 cm/s, pull pinch roller shaft with tension gauge (Fig. 11) and confirm that tape motion stops in the range of 1.7 kg – 2 kg.
7. If tape does not stop in this range, check the following points:

- Pinch roller pressure spring tightening faulty
- Pinch roller pressure spring defective
- Pinch roller contaminated
- Capstan contaminated

19.5 TAPE GUIDE HEIGHT (TENSION ARM)

Loosen tension arm setscrew and adjust for 6.4 mm dimension shown in Fig. 12.

19.6 TAPE SPEED

Three types of drive pulleys are available for adjusting RTU-11 tape speed. With No. 2 pulley as center value, No. 1 pulley will vary tape speed −0.5% and No. 3 by +0.5%.

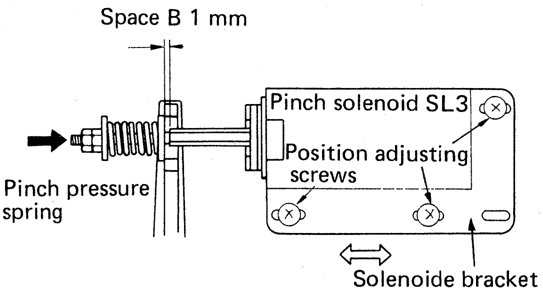

Space B 1 mm
Pinch solenoid SL3
Position adjusting screws
Pinch pressure spring
Solenoide bracket

Fig. 10

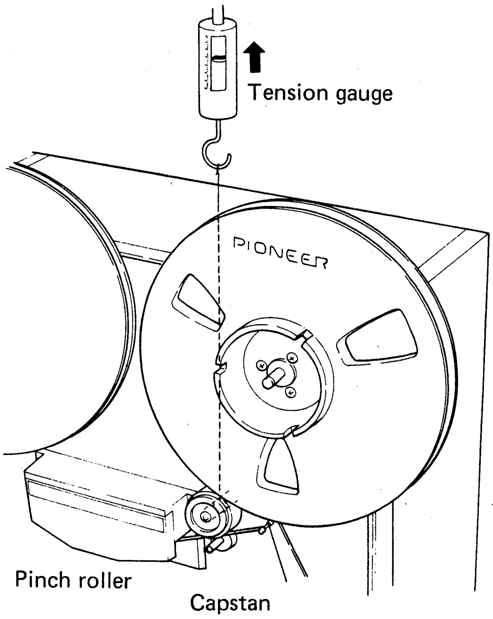

Tension gauge
PIONEER
Pinch roller
Capstan

Fig. 11

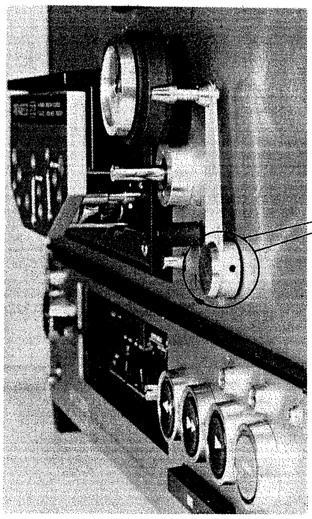


Photo 4

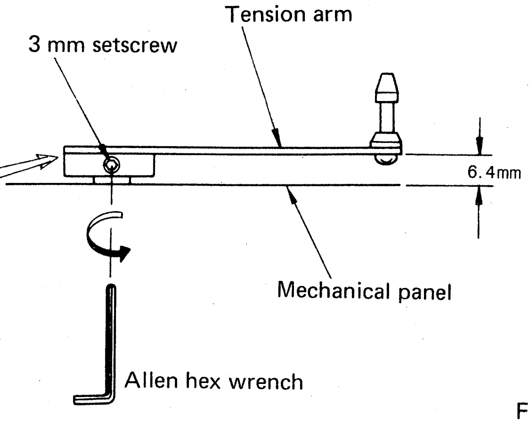

Tension arm
3 mm setscrew
6.4mm
Mechanical panel
Allen hex wrench

Fig. 12

19.7 CUE OPERATION

Perform this adjustment if FF operation or cue lever locking is defective.

1. Observe that cue arm B moves smoothly in cue arm guide slit (Fig. 13, 14), adjust by bending at the point indicated by the arrow in Fig. 13.
2. With deck in stop mode, loosen cue adjusting plate screws (Fig. 15) and adjust for 0 — 0.2 mm spacing A between shifter roller and cue adjusting plate.
3. After completing Step 1 and 2, with cue lever locked by means of lock switch on front panel, confirm 0.5 — 2 mm spacing B between pinch roller and capstan (Fig. 16). If not in this range, defective pinch roller shaft is indicated. Replace pinch roller arm A (Fig. 15) and repeat adjustments.
4. If cue lever lock and release are not smooth, loosen lock bracket screws (Fig. 13) and move lock bracket. Adjust so that lock pin (Fig. 14) moved smoothly in cue arm B lock hole.

(Cue Assembly Diagram)

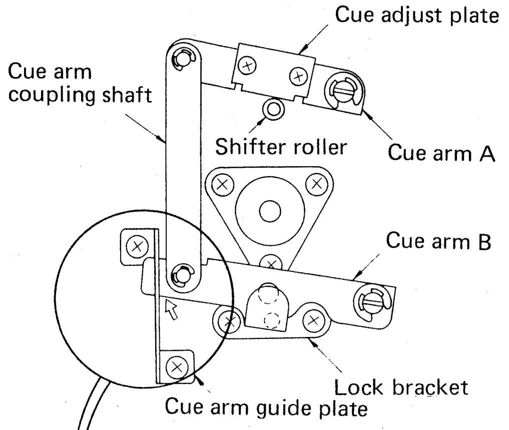

Cue adjust plate
Cue arm coupling shaft
Shifter roller
Cue arm A
Cue arm B
Lock bracket
Cue arm guide plate

Fig. 13

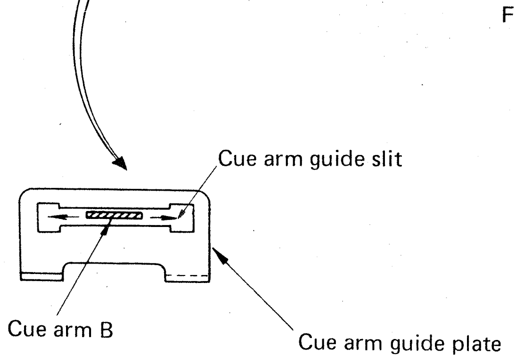

Cue arm guide slit
Cue arm B
Cue arm guide plate

Fig. 14

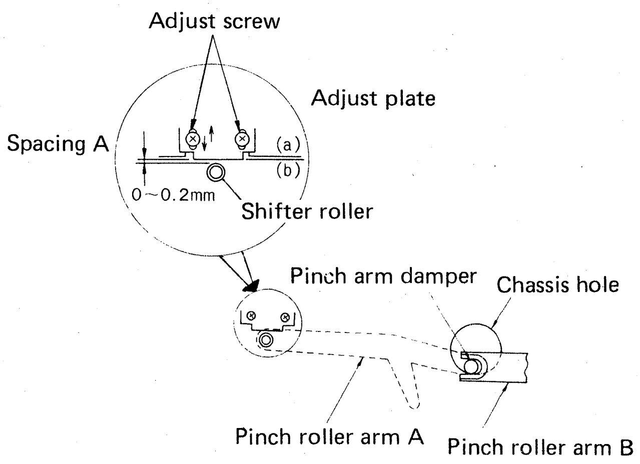

Adjust screw
Adjust plate
Spacing A
(a)
(b)
0~0.2mm
Shifter roller
Pinch arm damper
Chassis hole
Pinch roller arm A
Pinch roller arm B

Fig. 15

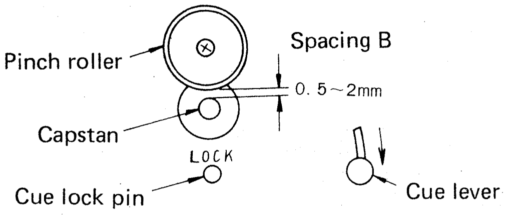

Pinch roller
Spacing B
0.5~2mm
Capstan
LOCK
Cue lock pin
Cue lever

Fig. 16

22. TAU-11 ADJUSTMENT

22.1 ADJUSTMENT CONDITIONS

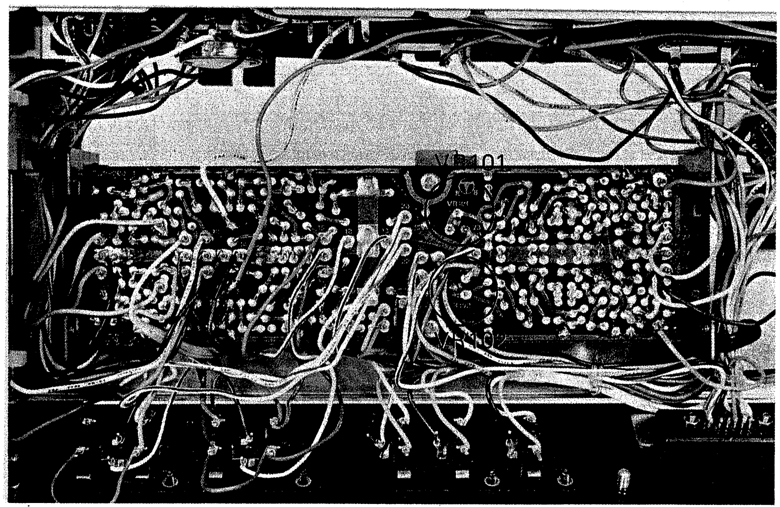
1. Connect 12 k ohms to OUTPUT REC jacks as load resistance.
2. Connect 47 k ohms to 51 k ohms to LINE OUT PLAY jacks as load resistance.

22.2 ADJUSTMENT STEPS (Photo 7)

1. Apply 1 kHz/−10 dBv input signal to LINE IN REC jacks and set MONITOR switch to SOURCE position.
2. Adjust LINE control for −7 dBv (447mV) indication on VTVM connected to LINE OUT PLAY (L & R) jacks.
3. At this time, adjust for 0dB indication on level meters.

   Locations: L-ch: VR101

   R-ch: VR102



TAU-11 Amplifier assembly (RWF-046) Photo 7

23. CIRCUIT DESCRIPTION(RTU-11)

Two types of head units (JT-2022T and JT-2044T) are available for the RTU-11. JT-2022T is for 2-track 2-channel, and JT-2044T for 4-track 4-channel. In this description, 2-track 2-channel appears as 2T/2C and 4-track 4-channel as 4T/4C. Control operation and circuit descriptions are covered in this section.

Semiconductor and relay operations with respect to RTU-11 operating modes are indicated in table 1.

Table 1

	STOP	PLAY	REC	FF	REW	PAUSE (PLAY)	Remarks
SR_{801}	—	—	—	ON	—	—	
SR_{802}	—	—	—	—	ON	—	
SR_{803}	—	ON	ON	—	—	ON	
SR_{804}	—	—	ON	—	—	—	
Ry_{801}	—	—	—	ON	—	—	
Ry_{802}	—	—	—	—	ON	—	
Ry_{803}	—	ON	ON	—	—	—	
Ry_{804}	—	—	ON	—	—	—	
Ry_{805}	ON	—	—	—	—	—	
D_5	—	ON	ON	—	—	—	
D_6	—	—	ON	—	—	—	
Q_{801}	ON	ON	ON	—	—	ON	
Q_{802}	—	ON	ON	—	—	—	
Q_{803}	—	ON	ON	—	—	—	
Q_{804}	—	—	—	ON	ON	ON	
Q_{805}	ON	ON	ON	—	—	ON	
Q_{806}	—	—	—	ON	ON	—	
Q_{407}	ON	ON	ON	ON	ON	ON	
Q_{408}	ON	ON	ON	ON	ON	ON	
SL_1	—	ON	ON	ON	ON	—	
SL_2	—	ON	ON	ON	ON	—	
SL_3	—	ON	ON	—	—	—	

23.13 2T-4T AUTOMATIC SELECTOR CIRCUIT

Two types of head units, JT-2044T (4T/4C) and JT-2022T (2T/2C), are available for the RTU-11. By simply plugging in the appropriate head unit, connections become automatically switched for 4T/4C or 2T/2C.

JT-2044T:

JT-2044T connects terminals J-K, turning on relay Ry301. Ry301-1 and Ry301-2 contacts are then switched to 4T/4C and back (ch-2 and ch-4) can be operated. Normal setting is at 2T/2C.

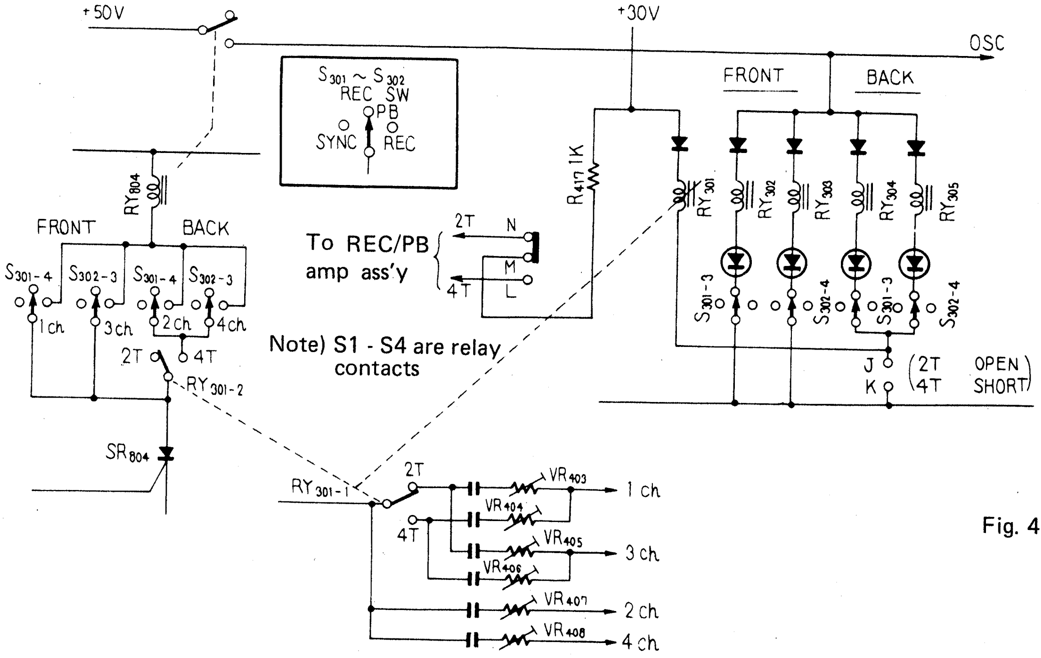

+50V
+30V
OSC
S301 ~ S302
REC SW
PB
SYNC
REC
FRONT
BACK
RY804
S301-4
S302-3
S301-4
S302-3
1ch
3ch
2ch
4ch
2T
4T
RY301-2
SR804
To REC/PB amp ass'y
2T
N
M
4T
L
Note) S1 - S4 are relay contacts
R417 1K
RY301
RY302
RY303
RY304
RY305
S301-3
S302-4
S301-3
S302-4
J
K
2T OPEN
4T SHORT
RY301-1
2T
4T
VR403
VR404
VR405
VR406
VR407
VR408
1 ch
3 ch
2 ch
4 ch

Fig. 42

23.14 ERASE HEAD DUMMY

The erase head is connected to the bias oscillator circuit. In order to provide the same circuit load conditions with either head unit (JT-2044T or JT-2022T), dummy coils are provided.

JT-2044T:

Dummy coils must comply with complex matching requirements between channels of 4-track 4-channel erase head (EH). L305 and L306 thus employ bifilar windings. L305 is EH1 and EH3 (front) dummy coil, consisting of L305-1 for EH1 (ch-1) and L305-2 for EH3 (ch-3).

JT-2022T:

Since EH2 and EH4 erase heads are absent in the case of 2-track 2-channel, L306 is always connected as the dummy coil.

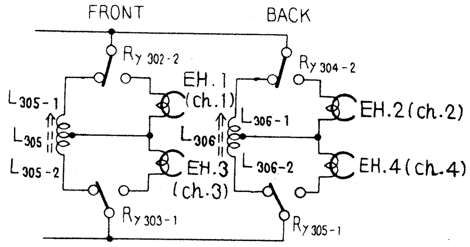
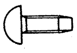
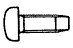
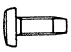
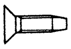
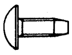
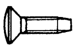
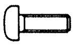
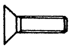
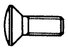
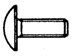
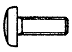
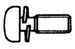
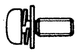
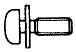
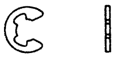
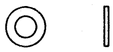
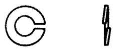
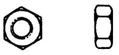
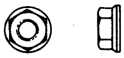
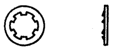
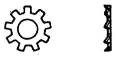
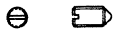
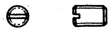
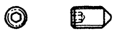
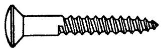
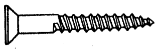
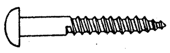

FRONT
BACK
Ry 302-2
Ry 304-2
EH.1 (ch.1)
L305-1
L305
L305-2
L306
L306-1
L306-2
EH.2 (ch.2)
EH.3 (ch.3)
EH.4 (ch.4)
Ry 303-1
Ry 305-1

Fig. 43

24. NOMENCLATURE OF SCREWS, WASHERS AND NUTS

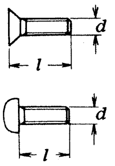
The following symbols stand for screws, washers and nuts as shown in exploded view.

Symbol	Description	Shape
RT	Brazier head tapping screw	
PT	Pan head tapping screw	
BT	Binding head tapping screw	
CT	Countersunk head tapping screw	
TT	Truss head tapping screw	
OCT	Oval countersunk head tapping screw	
PM	Pan head machine screw	
CM	Countersunk head machine screw	
OCM	Oval countersunk head machine screw	
TM	Truss head machine screw	
BM	Binding head machine screw	
PSA	Pan head screw with spring lock washer	
PSB	Pan head screw with spring lock washer and flat washer	
PSF	Pan head screw with flat washer	

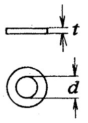
Symbol	Description	Shape
EW	E type washer	
FW	Flat washer	
SW	Spring lock washer	
N	Nut	
WN	Washer faced nut	
ITW	Internal toothed lock washer	
OTW	Outernal toothed lock washer	
SC	Slotted set screw (Cone point)	
SF	Slotted set screw (Flat point)	
HS	Hexagon socket headless set screw	
OCW	Oval countersunk head wood screw	
CW	Countersunk head wood screw	
RW	Round head wood screw	

EXAMPLE

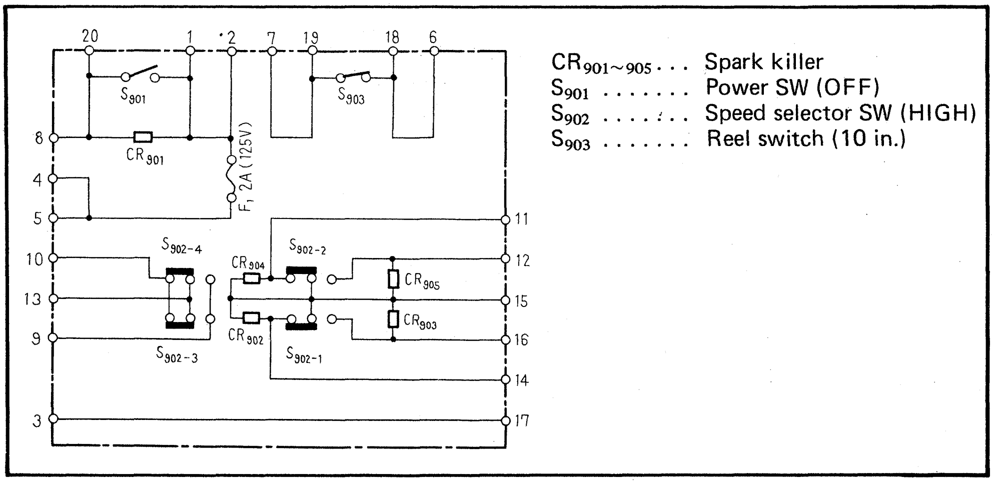
PM 3x8
length in mm (*l*)
diameter in mm (*d*)
Symbol



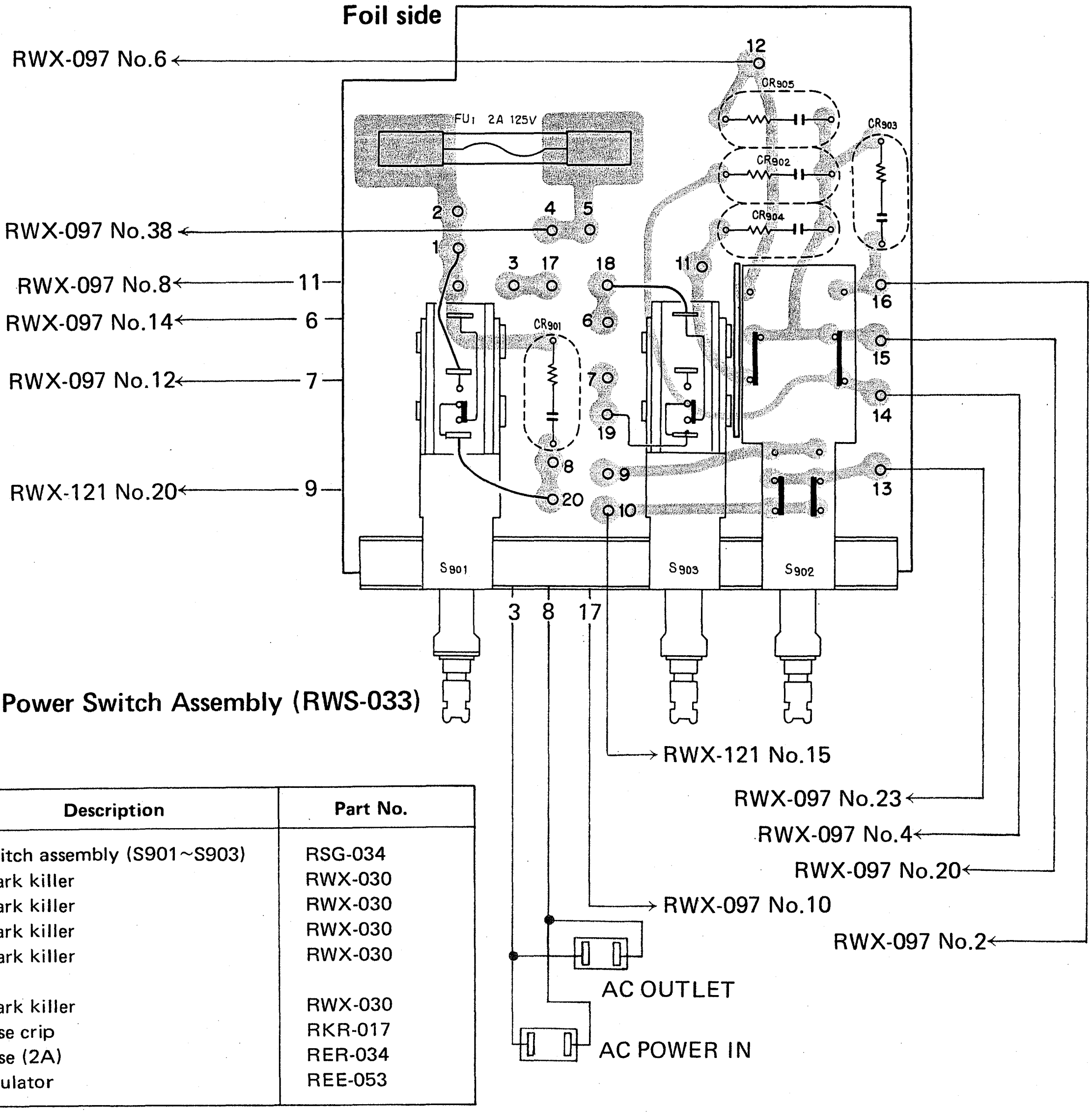
FW $9\phi\times1^t$
thickness in mm (*t*)
diameter in mm (*d*)
Symbol



16.11 POWER SWITCH ASSEMBLY (RWS-033)


20
1
2
7
19
18
6
8
4
5
10
13
9
3
11
12
15
16
14
17
S901
S903
CR901
F1 2A (125V)
S902-4
S902-2
CR904
CR905
CR903
CR902
S902-3
S902-1

$CR_{901\sim905}$ . . . Spark killer
S_{901} . . . . Power SW (OFF)
S_{902} . . . . Speed selector SW (HIGH)
S_{903} . . . . Reel switch (10 in.)

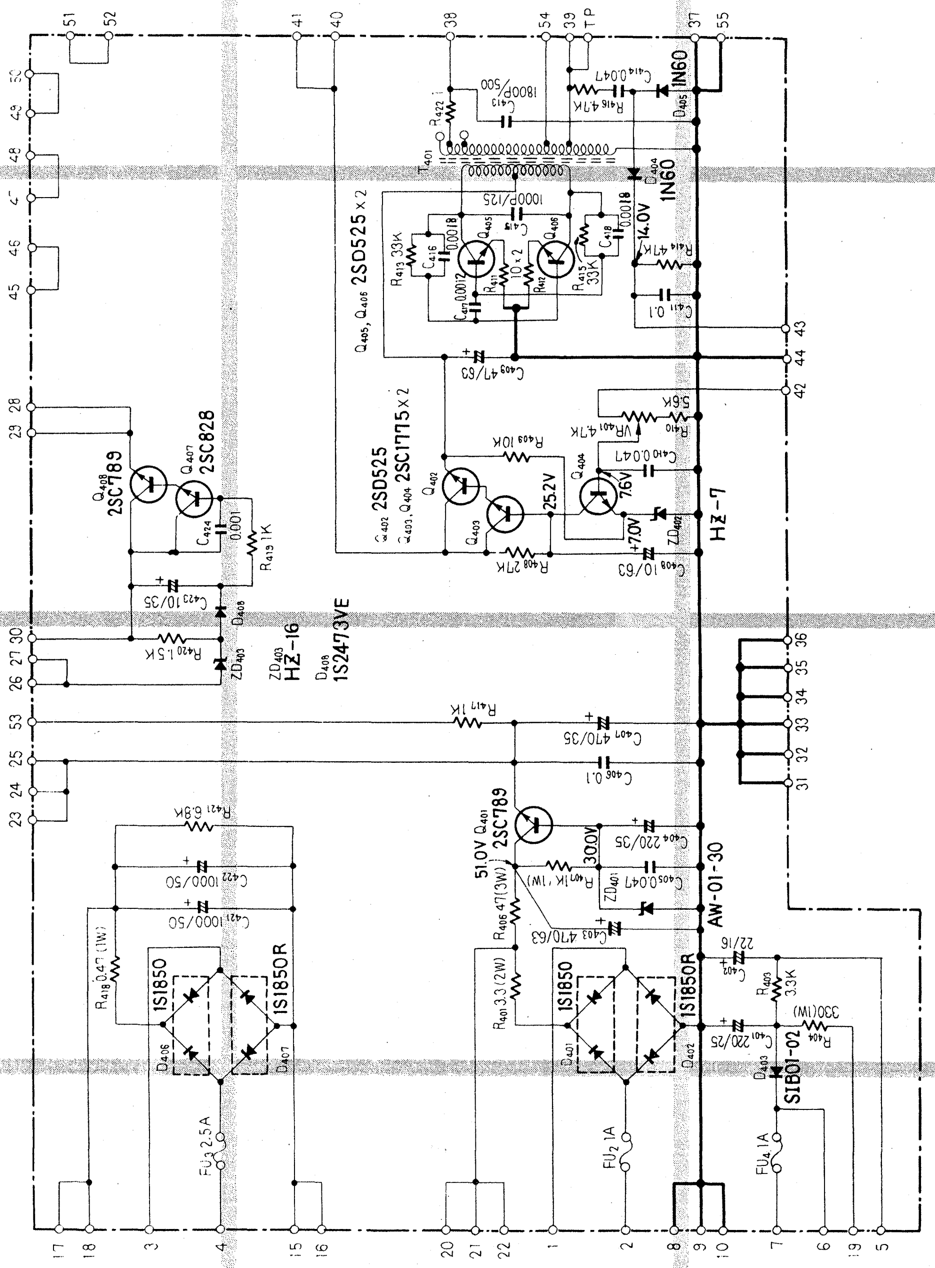

Foil side
RWX-097 No.6
RWX-097 No.38
RWX-097 No.8
RWX-097 No.14
RWX-097 No.12
RWX-121 No.20
11
6
7
9
FU1 2A 125V
CR905
CR902
CR904
CR903
CR901
12
2
4
5
1
3
17
18
11
16
15
14
13
6
7
19
8
20
9
10
S901
S903
S902
3
8
17
RWX-121 No.15
RWX-097 No.23
RWX-097 No.4
RWX-097 No.20
RWX-097 No.10
RWX-097 No.2
AC OUTLET
AC POWER IN

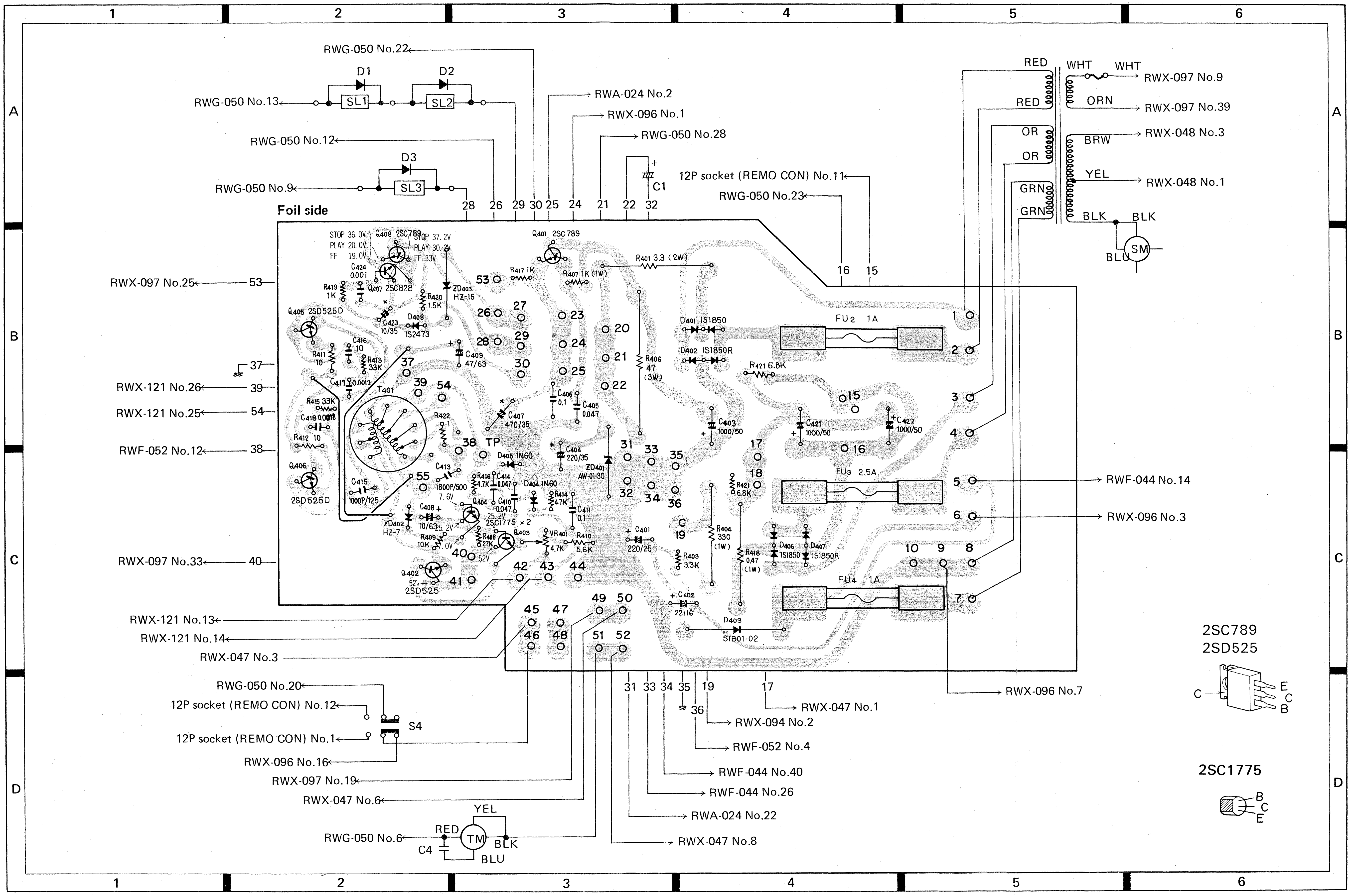
Parts List of Power Switch Assembly (RWS-033)

OTHERS

Symbol	Description	Part No.
	Switch assembly (S901~S903)	RSG-034
CR901	Spark killer	RWX-030
CR902	Spark killer	RWX-030
CR903	Spark killer	RWX-030
CR904	Spark killer	RWX-030
CR905	Spark killer	RWX-030
	Fuse crip	RKR-017
	Fuse (2A)	RER-034
	Insulator	REE-053

16.12 POWER SUPPLY & O.S.C. ASSEMBLY (RWR-031)


1
2
3
A
B
C
D
51
52
41
40
38
54
39
TP
37
55
50
49
48
47
46
45
28
23
30
27
26
53
25
24
23
36
35
34
33
32
31
43
44
42
17
18
3
4
15
16
20
21
22
1
2
8
9
10
7
6
19
5
Q408 2SC789
Q407 2SC828
C424 0.001
R419 1K
C423 10/35
D408
R420 1.5K
ZD403
ZD403 HZ-16
D408 1S2473VE
Q402 2SD525
Q403, Q404 2SC1775×2
Q402
Q403
Q404
R409 10K
25.2V
7.6V
+7.0V
ZD402
HZ-7
R408 27K
C408 10/63
C410 0.047
VR401 4.7K
R410 5.6K
C409 47/63
Q405, Q406 2SD525×2
Q405
Q406
R413 33K
C416 0.0018
C417 0.0012
R411
R412
10×2
R415 33K
C418 0.0018
C419 1000P/125
14.0V
R414 47K
C411 0.1
T401
R422
C413 1800P/500
R416 4.7K
C414 0.047
D405 1N60
D404 1N60
R417 1K
C407 470/35
C406 0.1
Q401 2SC789
51.0V
30.0V
C404 220/35
R407 1K(1W)
C405 0.047
ZD401
AW-01-30
R406 47(3W)
C403 470/63
R401 3.3(2W)
1S1850
1S1850R
D401
D402
C402 22/16
R403 3.3K
R404 330(1W)
C401 220/25
D403 S1B01-02
FU2 1A
FU4 1A
R418 0.47(1W)
C422 1000/50
C421 1000/50
R421 6.8K
1S1850
1S1850R
D406
D407
FU3 2.5A


Foil side
RWG-050 No.22
D1
D2
SL1
SL2
RWG-050 No.13
RWA-024 No.2
RWX-096 No.1
RWG-050 No.12
RWG-050 No.28
D3
SL3
RWG-050 No.9
C1
12P socket (REMO CON) No.11
RWG-050 No.23
28 26 29 30 25 24 21 22 32
RED
WHT
WHT
RWX-097 No.9
ORN
RWX-097 No.39
OR
BRW
RWX-048 No.3
YEL
RWX-048 No.1
GRN
BLK
BLU
SM
16 15
RWX-097 No.25
53
37
RWX-121 No.26
39
RWX-121 No.25
54
RWF-052 No.12
38
RWX-097 No.33
40
Q408 2SC789
Q407 2SC828
Q401 2SC789
Q405 2SD525D
Q406 2SD525D
Q404
Q403
2SC1775 ×2
Q402 2SD525
T401
TP
ZD403 HZ-16
ZD402 HZ-7
ZD401 AW-01-30
D408 IS2473
D405 IN60
D404 IN60
D401 IS1850
D402 IS1850R
D406 IS1850
D407 IS1850R
D403 S1B01-02
R401 3.3 (2W)
R406 47 (3W)
R404 330 (1W)
R418 0.47 (1W)
R421 6.8K
VR401 4.7K
C407 470/35
C403 1000/50
C421 1000/50
C422 1000/50
C401 220/25
C402 22/16
FU2 1A
FU3 2.5A
FU4 1A
RWF-044 No.14
RWX-096 No.3
10 9 8
RWX-121 No.13
RWX-121 No.14
RWX-047 No.3
42 43 44
45 47 49 50
46 48 51 52
RWG-050 No.20
12P socket (REMO CON) No.12
S4
12P socket (REMO CON) No.1
RWX-096 No.16
RWX-097 No.19
RWX-047 No.6
YEL
RED
TM
BLK
BLU
C4
RWG-050 No.6
31 33 34 35 19 17
36
RWX-047 No.1
RWX-094 No.2
RWF-052 No.4
RWF-044 No.40
RWF-044 No.26
RWA-024 No.22
RWX-047 No.8
RWX-096 No.7
2SC789
2SD525
C E C B
2SC1775
B C E
1 2 3 4 5 6
A B C D

Parts List of Power Supply & O.S.C. Assembly (RWR-031)

SEMICONDUCTORS

Symbol	Description	Part No.
Q401	Transistor	2SC789-0
Q402	Transistor	2SD525-0
Q403	Transistor	2SC1775-E
Q404	Transistor	2SC1775-E
Q405	Transistor	2SD525-0
Q406	Transistor	2SD525-0
Q407	Transistor	2SC828-R
Q408	Transistor	2SC789-0
D401	Diode	1S1850
D402	Diode	1S1850R
D403	Diode	SIB01-02
D404	Diode	1N60
D405	Diode	1N60
D406	Diode	1S1850
D407	Diode	1S1850R
D408	Diode	1S2473VE
ZD401	Zener diode	AW-01-30
ZD402	Zener diode	HZ7-B
ZD403	Zener diode	HZ16

RESISTORS

Symbol	Description			Part No.
VR401	Semi-fixed 4.7k-B			C92-051
R401	Metal film	3.3	2W	RN2PSF 3R3K
R403	Carbon film	3.3k		RD¼VS 332J
R404	Metal oxide	330	1W	RS1P 331J
R406	Metal oxide	47	3W	RS3PSF 470J
R407	Metal oxide	1k	1W	RS1P 102J
R408	Carbon film	27k		RD¼VS 273J
R409	Carbon film	10k		RD¼VS 103J
R410	Carbon film	5.2k		RD¼VS 562J
R411	Carbon film	10		RD¼VS 100J
R412	Carbon film	10		RD¼VS 100J
R413	Carbon film	33k		RD¼VS 333J
R414	Carbon film	47k		RD¼VS 473J
R415	Carbon film	33k		RD¼VS 333J
R416	Carbon film	4.7k		RD¼VS 472J
R417	Carbon film	1k		RD¼VS 102J
R418	Metal film	0.47	1W	RN1PSF R47K
R419	Carbon film	1k		RD¼VS 102J
R420	Carbon film	1.5k		RD¼VS 152J
R421	Carbon film	6.8k		RD¼VS 682J
R422	Carbon film	1		RD¼VS 010J

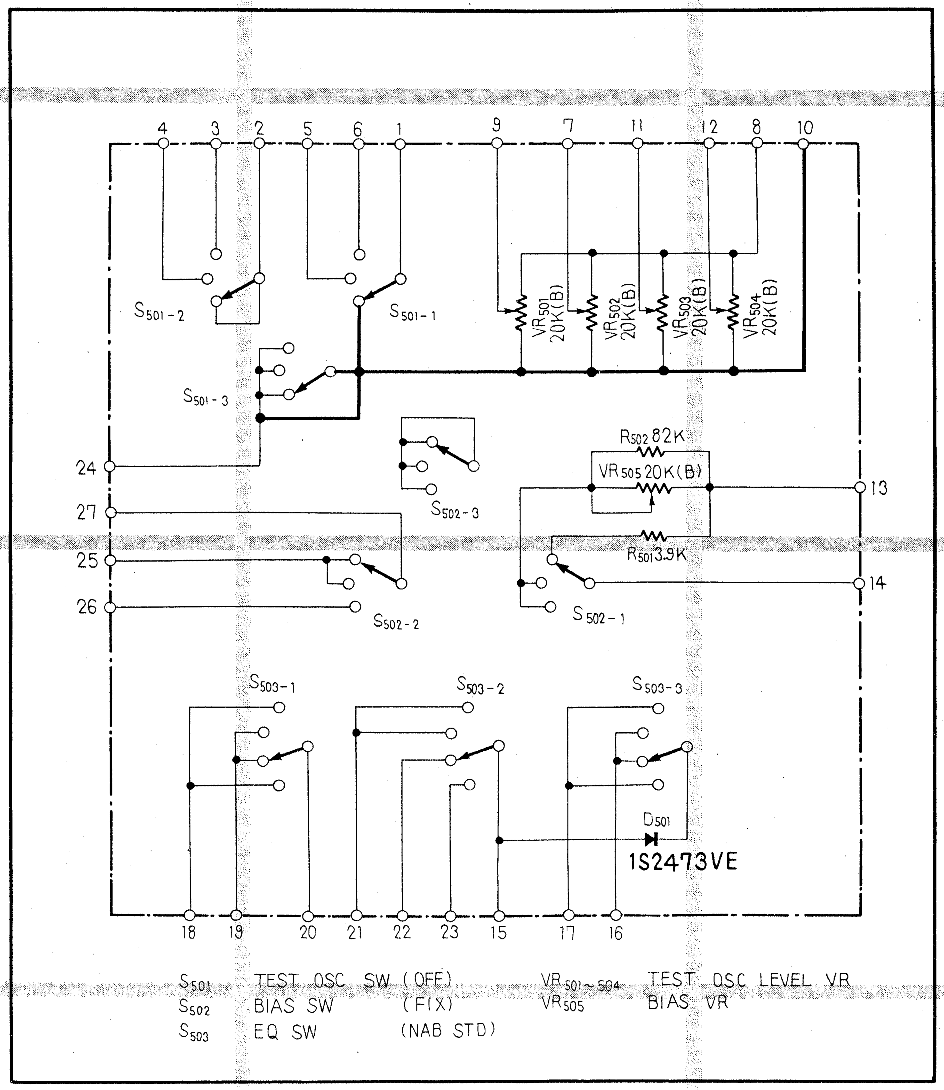
CAPACITORS

Symbol	Description			Part No.
C401	Electrolytic	220	25V	CEA 221P 25
C402	Electrolytic	22	16V	CEA 220P 16
C404	Electrolytic	220	35V	CEA 221P 35
C405	Mylar	0.047	50V	CQMA 473K 50
C406	Mylar	0.1	50V	CQMA 104K 50
C407	Electrolytic	470	35V	CEA 471P 35
C408	Electrolytic	10	63V	CEA 100P 63
C409	Electrolytic	47	63V	CEA 470P 63
C410	Mylar	0.047	50V	CQMA 473K 50
C411	Mylar	0.1	50V	CQMA 104K 50
C413	Polystyrene	1800p	500V	CQSA 182J 500
C414	Mylar	0.047	50V	CQMA 473K 50
C415	Polystyrene	1000p	125V	CQSA 102J 125
C416	Mylar	0.0018	50V	CQMA 182K 50
C417	Mylar	0.0012	50V	CQMA 122K 50
C418	Mylar	0.0018	50V	CQMA 182K 50
C421	Electrolytic	1000	50V	CEA 102P 50
C422	Electrolytic	1000	50V	CEA 102P 50
C423	Electrolytic	10	35V	CEA 100P 35
C424	Mylar	0.001	50V	CQMA 102K 50
C403	Electrolytic	470	63V	CEA 471P 63

OTHERS

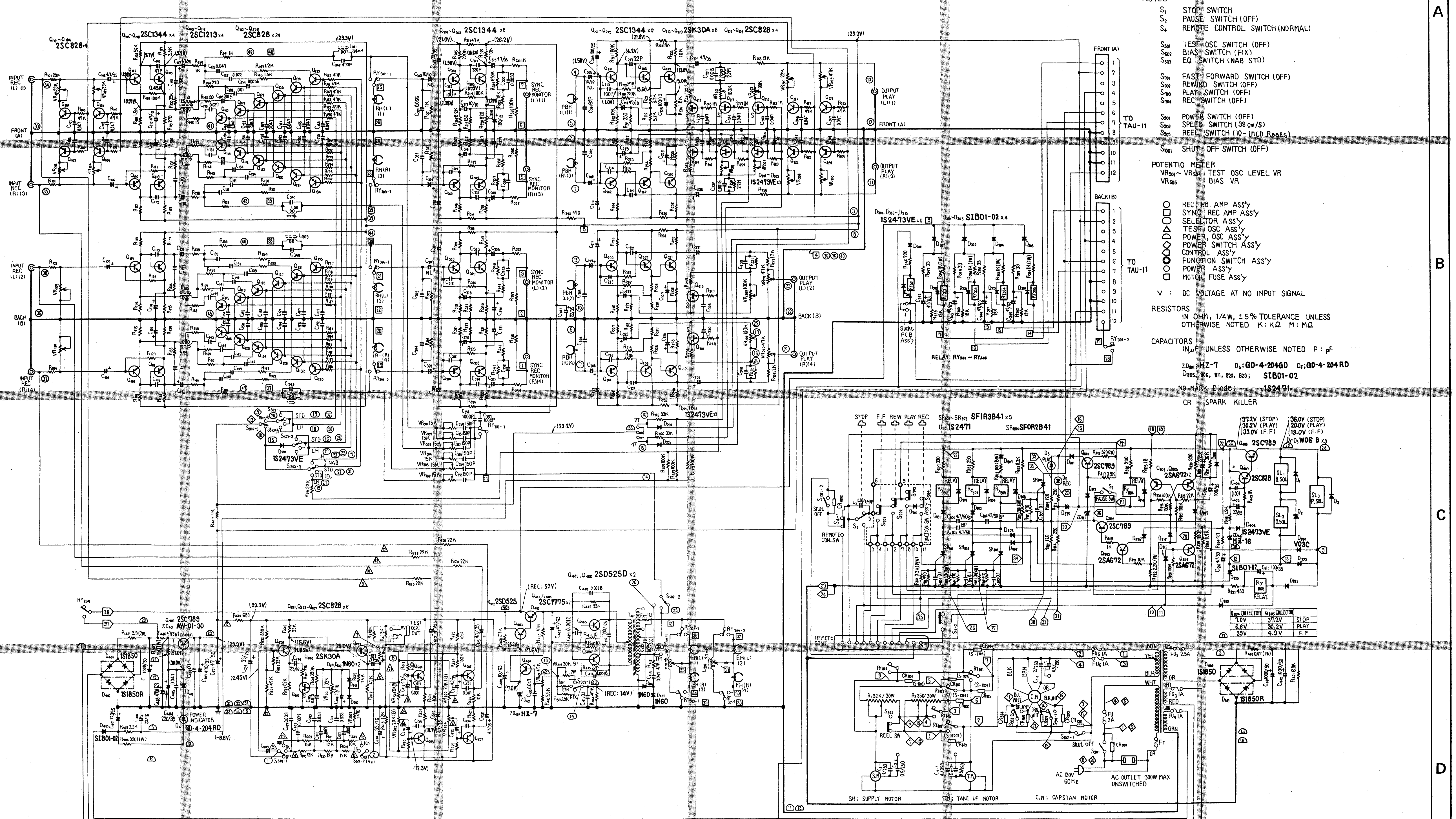
Symbol	Description	Part No.
	Spacer	REE-051
	Washer	REE-044
T401	O.S.C transformer	RTD-011
	Fuse clip	RKR-017
	Fuse 1A	REK-033
	Fuse 2.5A	REK-046

16.13 SELECTOR SWITCH ASSEMBLY (RWX-121)


4 3 2 5 6 1 9 7 11 12 8 10
S_{501-2}
S_{501-1}
S_{501-3}
VR_{501} 20K(B)
VR_{502} 20K(B)
VR_{503} 20K(B)
VR_{504} 20K(B)
24
27
25
26
S_{502-3}
R_{502} 82K
VR_{505} 20K(B)
R_{501} 3.9K
13
14
S_{502-2}
S_{502-1}
S_{503-1}
S_{503-2}
S_{503-3}
D_{501}
1S2473VE
18 19 20 21 22 23 15 17 16
S_{501} TEST OSC SW (OFF)
S_{502} BIAS SW (FIX)
S_{503} EQ SW (NAB STD)
$VR_{501 \sim 504}$ TEST OSC LEVEL VR
VR_{505} BIAS VR

16. RTU-11 SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST

16.1 SCHEMATIC DIAGRAM


1
2
3
4
5
6
A
B
C
D
INPUT REC (L)(1)
FRONT (A)
INPUT REC (R)(3)
INPUT REC (L)(2)
BACK (B)
INPUT REC (R)(4)
Q101~Q104 2SC828
Q105~Q108 2SC1344 x4
Q109~Q112 2SC1213 x4
Q113~Q136 2SC828 x24
Q201~Q208 2SC1344 x8
SYNC REC MONITOR (L)(1)
SYNC REC MONITOR (R)(3)
SYNC REC MONITOR (L)(2)
SYNC REC MONITOR (R)(4)
Q301~Q312 2SC1344 x12
Q313~Q320 2SK30A x8
Q321~Q324 2SC828 x4
PBH (L)(1)
PBH (R)(3)
PBH (L)(2)
PBH (R)(4)
OUTPUT PLAY (L)(1)
OUTPUT PLAY (R)(3)
OUTPUT PLAY (L)(2)
OUTPUT PLAY (R)(4)
FRONT (A)
BACK (B)
TO TAU-11
D301, D303~D310 1S2473VE x6
D302~D305 SIB01-02 x4
SOCKET PCB ASS'Y
RELAY: RY301 ~ RY304
1S2473VE
STD
LH
NAB
IEL
STOP
F.F
REW
PLAY
REC
SR801~SR803 SFIR3B41 x3
D801 1S2471
SR804 SFOR2B41
SHUT OFF
REMOTE CON. SW
REMOTE CONT.
2SC789
2SA672
Q804, Q805 2SA672 x2
37.2V (STOP)
30.2V (PLAY)
33.0V (F.F)
36.0V (STOP)
20.0V (PLAY)
19.0V (F.F)
Q406 2SC789
D1~D3 W06 B x3
2SC828
SL1 B.SOL
SL2 B.SOL
SL3 P.SOL
1S2473VE
HZ-16
V03C
SIB01-02
RELAY
Q401, Q402~Q404 2SC828 x6
Q401 2SC789
ZD401 AW-01-30
1S1850
1S1850R
SIB01-02
POWER INDICATOR GD-4-204RD
2SK30A
1N60 x2
TEST OSC OUT
Q405, Q406 2SD525D x2
2SD525
2SC1775 x2
(REC: 52V)
(REC: 14V)
1N60
1N60
HZ-7
EH(L)
EH(R)
FH(L)
FH(R)
REEL SW
SM
TM
CM
AC 120V 60Hz
AC OUTLET 300W MAX UNSWITCHED
SM: SUPPLY MOTOR
TM: TAKE UP MOTOR
C.M: CAPSTAN MOTOR
BLK
BRN
YEL
WHT
RED
GRN
OR
FU1 2.5A
FU2 1A
FU3 1A
FU4 1A
1S1850
1S1850R

Q804 COLLECTOR	Q805 COLLECTOR	
7.0V	37.2V	STOP
6.6V	30.2V	PLAY
33V	4.3V	F.F

NOTES :

S_1 STOP SWITCH
S_2 PAUSE SWITCH (OFF)
S_4 REMOTE CONTROL SWITCH (NORMAL)

S_{501} TEST OSC SWITCH (OFF)
S_{502} BIAS SWITCH (FIX)
S_{503} EQ SWITCH (NAB STD)

S_{701} FAST FORWARD SWITCH (OFF)
S_{702} REWIND SWITCH (OFF)
S_{703} PLAY SWITCH (OFF)
S_{704} REC SWITCH (OFF)

S_{901} POWER SWITCH (OFF)
S_{902} SPEED SWITCH (38 cm/S)
S_{903} REEL SWITCH (10-inch Reels)

S_{1001} SHUT OFF SWITCH (OFF)

POTENTIO METER
VR_{501} ~ VR_{504} TEST OSC LEVEL VR
VR_{505} BIAS VR

○ REC, PB. AMP ASS'y
□ SYNC REC AMP ASS'y
⬭ SELECTOR ASS'y
△ TEST OSC ASS'y
◠ POWER, OSC ASS'y
◇ POWER SWITCH ASS'y
⌂ CONTROL ASS'y
● FUNCTION SWITCH ASS'y
○ POWER ASS'y
⊏ MOTOR FUSE ASS'y

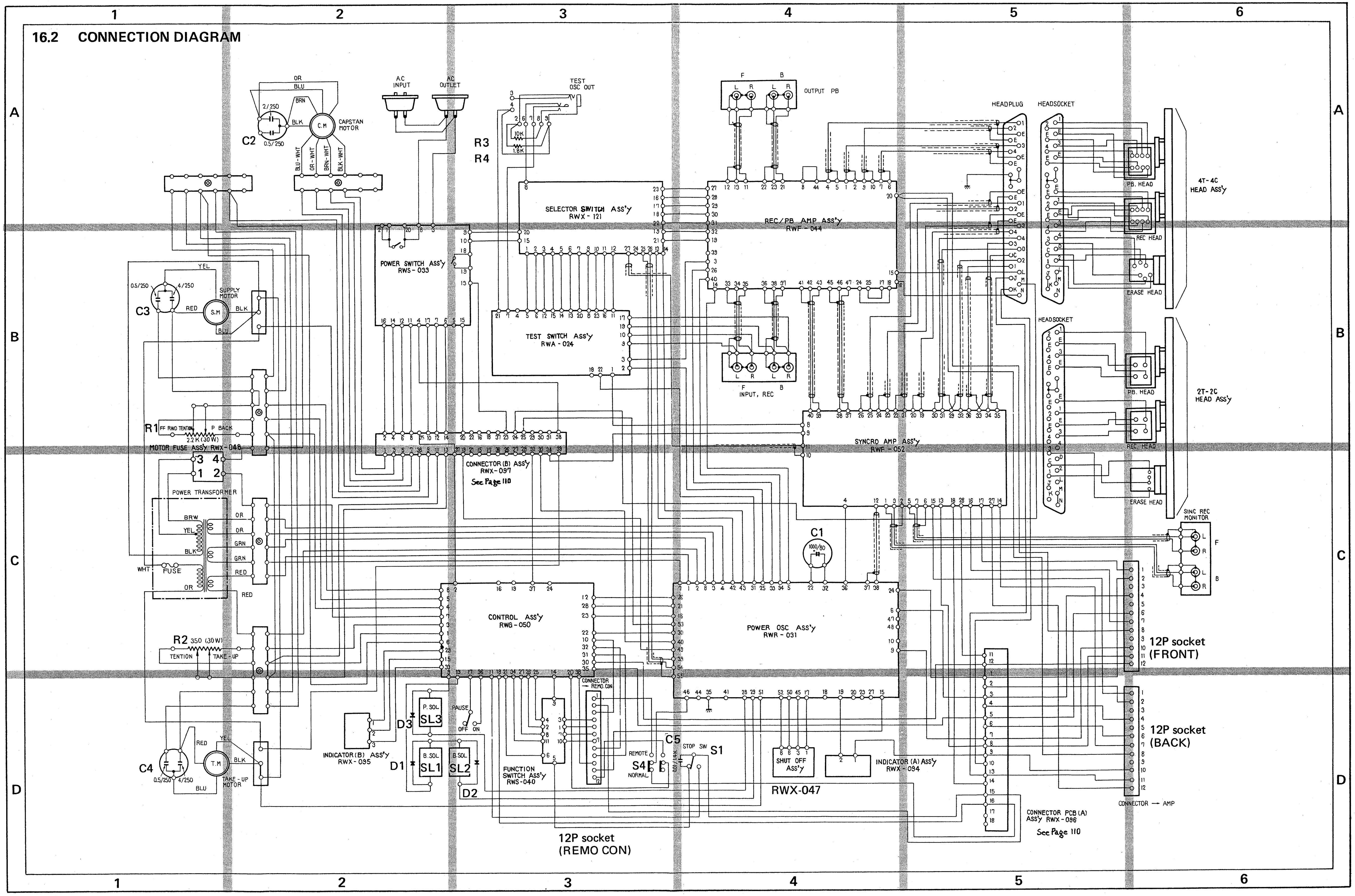
V : DC VOLTAGE AT NO INPUT SIGNAL

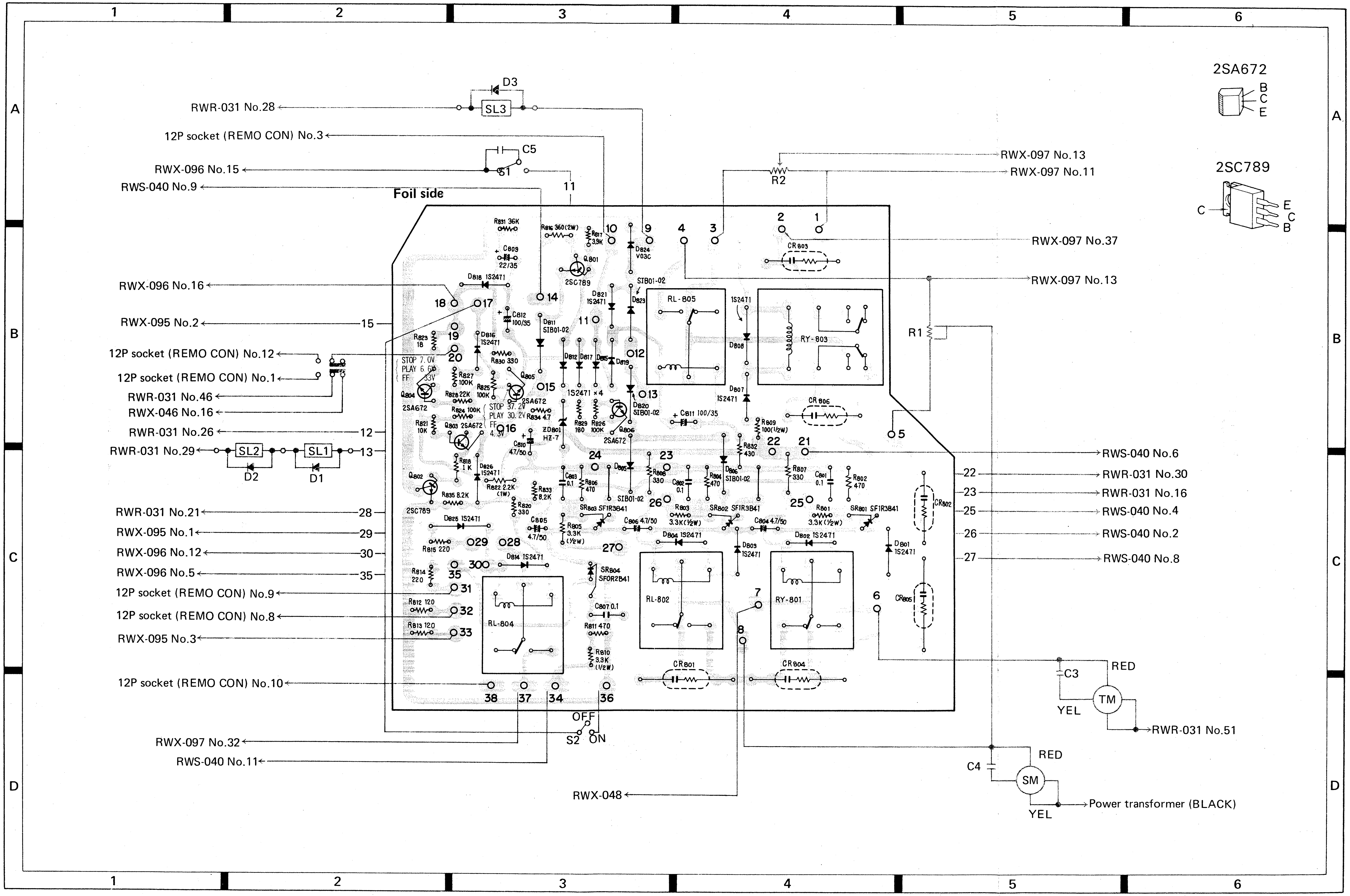
RESISTORS
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED K: KΩ M: MΩ

CAPACITORS
IN μF UNLESS OTHERWISE NOTED P: pF

ZD_{801}; **HZ-7** D_5; **GD-4-204GD** D_6; **GD-4-204RD**
$D_{805, 806, 811, 820, 823}$; **SIB01-02**
NO MARK Diode; **1S2471**
CR SPARK KILLER

16.2 CONNECTION DIAGRAM


1
2
3
4
5
6
A
B
C
D
CAPSTAN MOTOR
C.M
C2
2/250
0.5/250
OR
BLU
BRN
BLK
BLU-WHT
OR-WHT
BRN-WHT
BLK-WHT
AC INPUT
AC OUTLET
TEST OSC OUT
R3
R4
10K
1.8K
OUTPUT PB
F
B
L
R
HEADPLUG
HEADSOCKET
PB. HEAD
REC HEAD
ERASE HEAD
4T-4C HEAD ASS'Y
2T-2C HEAD ASS'Y
SELECTOR SWITCH ASS'Y RWX-121
REC/PB AMP ASS'Y RWF-044
POWER SWITCH ASS'Y RWS-033
TEST SWITCH ASS'Y RWA-024
INPUT, REC
SUPPLY MOTOR
S.M
C3
0.5/250
4/250
YEL
RED
R1
FF RWD TENTION
P BACK
2.2K (30W)
MOTOR FUSE ASS'Y RWX-048
CONNECTOR (B) ASS'Y RWX-097
See Page 110
SYNCRO AMP ASS'Y RWF-052
POWER TRANSFORMER
BRW
GRN
WHT
FUSE
SINC REC MONITOR
C1
1000/50
CONTROL ASS'Y RWG-050
POWER OSC ASS'Y RWR-031
12P socket (FRONT)
R2
350 (30W)
TENTION
TAKE-UP
CONNECTOR → REMO CON
P. SOL
SL3
D3
PAUSE
OFF
ON
B. SOL
SL1
SL2
D1
D2
INDICATOR (B) ASS'Y RWX-095
FUNCTION SWITCH ASS'Y RWS-040
REMOTE
NORMAL
S4
C5
STOP SW
S1
SHUT OFF ASS'Y
RWX-047
INDICATOR (A) ASS'Y RWX-094
12P socket (BACK)
CONNECTOR → AMP
CONNECTOR PCB (A) ASS'Y RWX-096
See Page 110
C4
T.M
TAKE-UP MOTOR
12P socket (REMO CON)


Foil side
2SA672
B
C
E
2SC789
C
E
C
B
D3
SL3
RWR-031 No.28
12P socket (REMO CON) No.3
C5
S1
RWX-096 No.15
RWS-040 No.9
11
RWX-097 No.13
RWX-097 No.11
R2
RWX-097 No.37
RWX-097 No.13
R1
RWX-096 No.16
RWX-095 No.2
15
12P socket (REMO CON) No.12
12P socket (REMO CON) No.1
RWR-031 No.46
RWX-046 No.16
RWR-031 No.26
12
RWR-031 No.29
SL2
SL1
13
D2
D1
RWR-031 No.21
28
RWX-095 No.1
29
RWX-096 No.12
30
RWX-096 No.5
35
12P socket (REMO CON) No.9
12P socket (REMO CON) No.8
RWX-095 No.3
12P socket (REMO CON) No.10
RWX-097 No.32
RWS-040 No.11
OFF
S2
ON
RWX-048
RWS-040 No.6
RWR-031 No.30
RWR-031 No.16
RWS-040 No.4
RWS-040 No.2
RWS-040 No.8
22
23
25
26
27
C3
RED
YEL
TM
RWR-031 No.51
C4
RED
SM
YEL
Power transformer (BLACK)
RL-805
RY-803
RL-802
RY-801
RL-804
CR803
CR806
CR801
CR804
CR802
CR805
Q801 2SC789
Q802 2SC789
Q803 2SA672
Q804 2SA672
Q805 2SA672
Q806 2SA672
STOP 7.0V
PLAY 6.6V
FF 33V
STOP 37.2V
PLAY 30.2V
FF 4.3V
ZD801 HZ-7
1S2471 ×4
SR801 SF1R3B41
SR802 SF1R3B41
SR803 SF1R3B41
SR804 SF0R2B41
A
B
C
D
1
2
3
4
5
6

Parts List of Control Assembly (RWG-050)

SEMICONDUCTORS

Symbol	Description	Part No.
Q801	Transistor	2SC789-O (or Y)
Q802	Transistor	2SC789-O (or Y)
Q803	Transistor	2SA672-B
Q804	Transistor	2SA672-B
Q805	Transistor	2SA672-B
Q806	Transistor	2SA672-B
D801	Diode	1S2471
D802	Diode	1S2471
D803	Diode	1S2471
D804	Diode	1S2471
D805	Diode	SIB-01-02
D806	Diode	SIB-01-02
D807	Diode	1S2471
D808	Diode	1S2471
D811	Diode	SIB-01-02
D812	Diode	1S2471
D813	Diode	HZ-7 B
D814	Diode	1S2471
D815	Diode	1S2471
D816	Diode	1S2471
D817	Diode	1S2471
D818	Diode	1S2471
D819	Diode	1S2471
D820	Diode	SIB-01-02
D821	Diode	1S2471
D823	Diode	SIB-01-02
D824	Diode	V03 C
D825	Diode	1S2471
D826	Diode	1S2471

OTHERS

Symbol	Description	Part No.
RY801	Relay	RSR-011
RY802	Relay	RSR-011
RY803	Relay	RSR-016
RY804	Relay	RSR-011
RY805	Relay	RSR-011
SR801	Thyristor	SF1R3B41
SR802	Thyristor	SF1R3B41
SR803	Thyristor	SF1R3B41
SR804	Thyristor	SF0R2B41
CR801	Spark killer	RWX-106
CR802	Spark killer	RWX-105
CR803	Spark killer	RWX-105
CR804	Spark killer	RWX-106
CR805	Spark killer	RWX-106
CR806	Spark killer	RWX-105

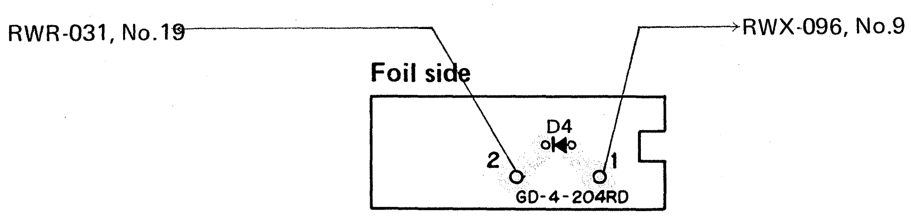
RESISTORS

Symbol	Description			Part No.
R801	Carbon film	3.3k	½W	RD½VS 332J
R802	Carbon film	470		RD¼VS 471J
R803	Carbon film	3.3k	½W	RD½VS 332J
R804	Carbon film	470		RD¼VS 471J
R805	Carbon film	3.3k	½W	RD½VS 332J
R806	Carbon film	470		RD¼VS 471J
R807	Carbon film	330		RD¼PSF 331J
R808	Carbon film	330		RD¼PSF 331J
R809	Carbon film	100	½W	RD½PSF 101J
R810	Carbon film	3.3k	½W	RD½VS 332J
R811	Carbon film	470		RD¼VS 471J
R812	Carbon film	120		RD¼VS 121J
R813	Carbon film	120		RD¼VS 121J
R814	Carbon film	220		RD¼VS 221J
R815	Carbon film	220		RD¼VS 221J
R816	Metal oxide	360	2W	RS2P 361J
R817	Carbon film	3.9k		RD¼VS 392J
R818	Carbon film	1.0k		RD¼VS 102J
R820	Carbon film	330		RD¼PSF 331J
R821	Carbon film	10k		RD¼VS 103J
R822	Metal oxide	2.2k	1W	RS1P 222J
R823	Carbon film	18		RD¼VS 180J
R824	Carbon film	100k		RD¼VS 104J
R825	Carbon film	100k		RD¼VS 104J
R826	Carbon film	100k		RD¼VS 104J
R827	Carbon film	100k		RD¼VS 104J
R828	Carbon film	22k		RD¼VS 223J
R829	Carbon film	180		RD¼PSF 181J
R830	Carbon film	330		RD¼PSF 331J
R831	Carbon film	36k		RD¼VS 363J
R832	Carbon film	430		RD¼PSF 431J
R833	Carbon film	8.2k		RD¼VS 822J
R834	Carbon film	4.7k		RD¼VS 472J
R835	Carbon film	8.2k		RD¼VS 822J

CAPACITORS

Symbol	Description			Part No.
C801	Mylar	0.1	50V	CQMA 104K 50
C802	Mylar	0.1	50V	CQMA 104K 50
C803	Mylar	0.1	50V	CQMA 104K 50
C804	Bi-polar	4.7	50V	RCH-026
C805	Bi-polar	4.7	50V	RCH-026
C806	Bi-polar	4.7	50V	RCH-026
C807	Mylar	0.1	50V	CQMA 104K 50
C809	Electrolytic	22	35V	CEA 220P 35
C810	Electrolytic	4.7	50V	CEA 4R7P 50
C811	Electrolytic	100	35V	CEA 101P 35
C812	Electrolytic	100	35V	CEA 101P 35

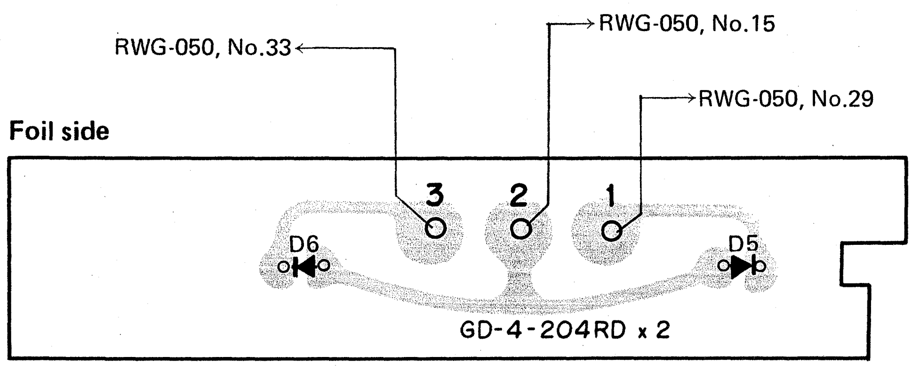
16.5 INDICATOR (A) ASSEMBLY (RWX-094)



Parts List of Indicator (A) Assembly (RWX-094)

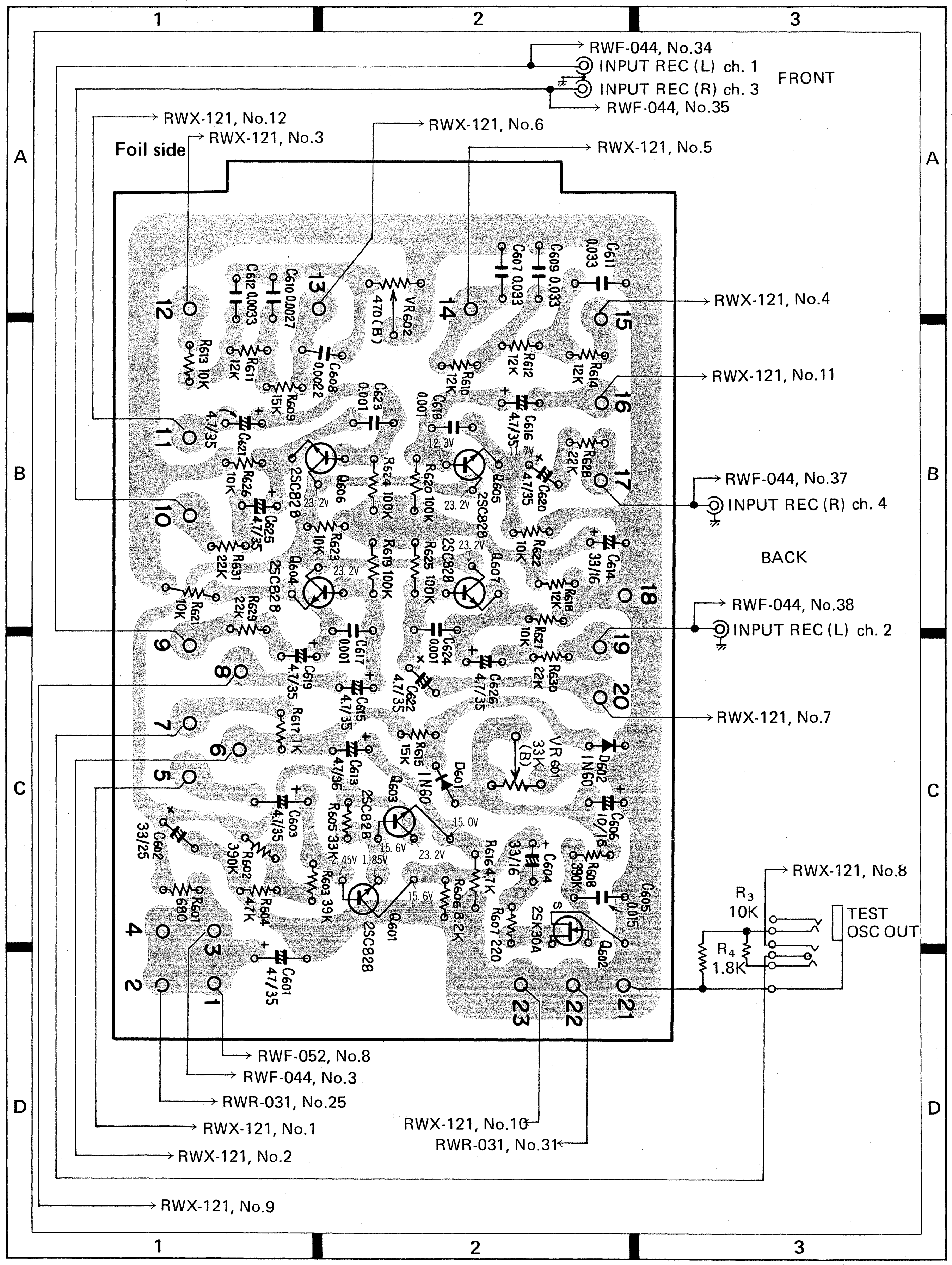
Symbol	Description	Part No.
D4	Light emitting diode	GD-4-204RD

16.6 INDICATOR (B) ASSEMBLY (RWX-095)



Parts List of Indicator (B) Assembly (RWX-095)

Symbol	Description	Part No.
D5	Light emitting diode	GD-4-204RD
D6	Light emitting diode	GD-4-204GD


1
2
3
A
B
C
D
RWF-044, No.34
INPUT REC (L) ch. 1
INPUT REC (R) ch. 3
RWF-044, No.35
FRONT
RWX-121, No.12
RWX-121, No.3
Foil side
RWX-121, No.6
RWX-121, No.5
RWX-121, No.4
RWX-121, No.11
RWF-044, No.37
INPUT REC (R) ch. 4
BACK
RWF-044, No.38
INPUT REC (L) ch. 2
RWX-121, No.7
RWX-121, No.8
R3 10K
R4 1.8K
TEST OSC OUT
RWF-052, No.8
RWF-044, No.3
RWR-031, No.25
RWX-121, No.1
RWX-121, No.10
RWR-031, No.31
RWX-121, No.2
RWX-121, No.9
VR602 470 (B)
VR 601 33K (B)
D601 1N60
D602 1N60
Q601 2SC828
Q602 2SK30A
Q603 2SC828
Q604 2SC828
Q605 2SC828
Q606 2SC828
Q607 2SC828
23.2V
12.3V
15.0V
15.6V
1.85V
1.45V

Parts List of Test O.S.C. Assembly (RWA-024)

SEMICONDUCTORS

Symbol	Description	Part No.
Q601	Transistor	2SC828-R (or S)
Q602	Transistor	2SK30A-Y
Q603	Transistor	2SC828-R (or S)
Q604	Transistor	2SC828-R (or S)
Q605	Transistor	2SC828-R (or S)
Q606	Transistor	2SC828-R (or S)
Q607	Transistor	2SC828-R (or S)
D601	Diode	1N60
D602	Diode	1N60

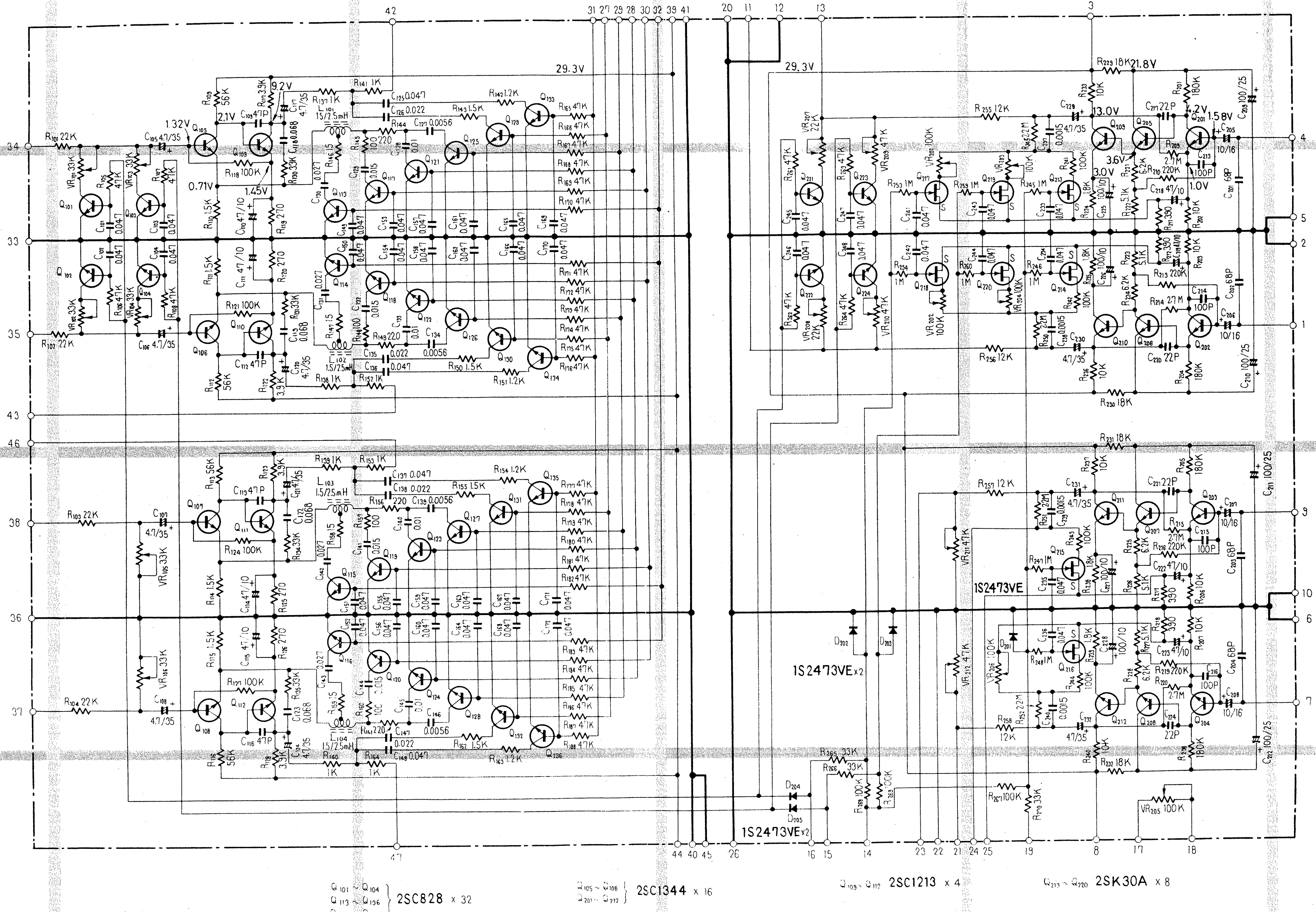
RESISTORS

Symbol	Description		Part No.
VR601	Semi-fixed		C81-426
VR602	Semi-fixed		C81-422
R601	Carbon film	680	RD¼VS 681J
R602	Carbon film	390k	RD¼VS 394J
R603	Carbon film	39k	RD¼VS 393J
R604	Carbon film	47k	RD¼VS 473J
R605	Carbon film	33k	RD¼VS 333J
R606	Carbon film	8.2k	RD¼VS 822J
R607	Carbon film	220	RD¼VS 221J
R608	Carbon film	390k	RD¼VS 394J
R609	Carbon film	15k	RD¼VS 153J
R610	Carbon film	12k	RD¼VS 123J
R611	Carbon film	12k	RD¼VS 123J
R612	Carbon film	12k	RD¼VS 123J
R613	Carbon film	10k	RD¼VS 103J
R614	Carbon film	12k	RD¼VS 123J
R615	Carbon film	15k	RD¼VS 153J
R616	Carbon film	4.7k	RD¼VS 472J
R617	Carbon film	1k	RD¼VS 102J
R618	Carbon film	12k	RD¼VS 123J
R619	Carbon film	100k	RD¼VS 104J
R620	Carbon film	100k	RD¼VS 104J
R621	Carbon film	10k	RD¼VS 103J
R622	Carbon film	10k	RD¼VS 103J
R623	Carbon film	10k	RD¼VS 103J
R624	Carbon film	100k	RD¼VS 104J
R625	Carbon film	100k	RD¼VS 104J
R626	Carbon film	10k	RD¼VS 103J
R627	Carbon film	10k	RD¼VS 103J
R628	Carbon film	22k	RD¼VS 223J
R629	Carbon film	22k	RD¼VS 223J
R630	Carbon film	22k	RD¼VS 223J
R631	Carbon film	22k	RD¼VS 223J

CAPACITORS

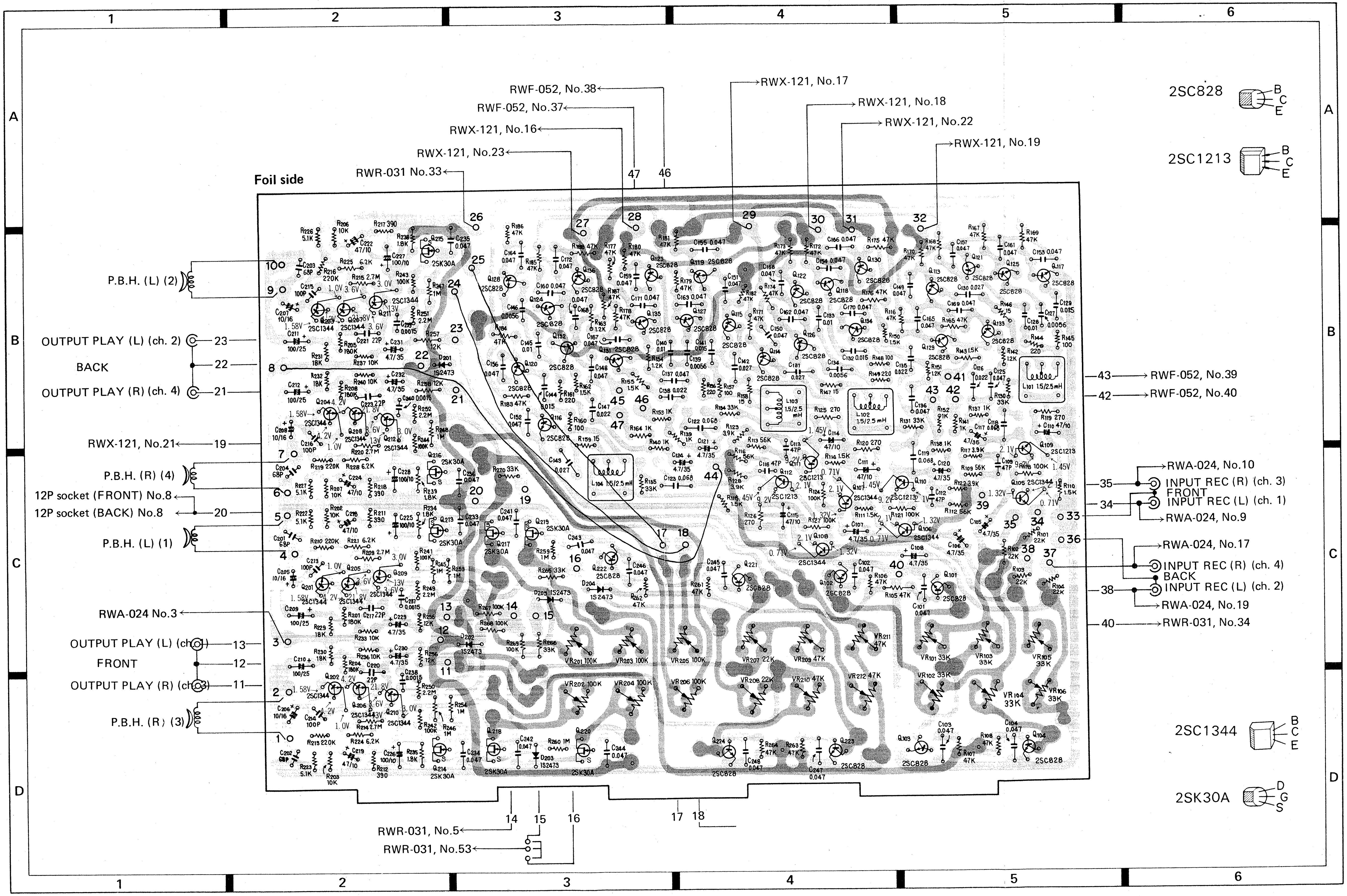
Symbol	Description			Part No.
C601	Electrolytic	47	50V	CEA 470P 50
C602	Electrolytic	33	25V	CEA 330P 25
C603	Electrolytic	4.7	35V	CEA 4R7P 35
C604	Electrolytic	33	16V	CEA 330P 16
C605	Mylar	0.015	50V	CQMA 153K 50
C606	Electrolytic	10	16V	CEA 100P 16
C607	Mylar	0.033	50V	CQMA 333K 50
C608	Mylar	0.0022	50V	CQMA 222K 50
C609	Mylar	0.033	50V	CQMA 333K 50
C610	Mylar	0.0027	50V	CQMA 272K 50
C611	Mylar	0.033	50V	CQMA 333K 50
C612	Mylar	0.0033	50V	CQMA 332K 50
C613	Electrolytic	4.7	35V	CEA 4R7P 35
C614	Electrolytic	33	16V	CEA 330P 16
C615	Electrolytic	4.7	35V	CEA 4R7P 35
C616	Electrolytic	4.7	35V	CEA 4R7P 35
C617	Mylar	0.001	50V	CQMA 102K 50
C618	Mylar	0.001	50V	CQMA 102K 50
C619	Electrolytic	4.7	35V	CEA 4R7P 35
C620	Electrolytic	4.7	35V	CEA 4R7P 35
C621	Electrolytic	4.7	35V	CEA 4R7P 35
C622	Electrolytic	4.7	35V	CEA 4R7P 35
C623	Mylar	0.001	50V	CQMA 102K 50
C624	Mylar	0.001	50V	CQMA 102K 50
C625	Electrolytic	4.7	35V	CEA 4R7P 35
C626	Electrolytic	4.7	35V	CEA 4R7P 35

16.9 REC/PB AMPLIFIER ASSEMBLY (RWF-044)


A
B
C
D
42
31 27 29 28 30 32 39 41
20 11 12 13
3
29.3V
34
33
35
43
46
38
36
37
47
44 40 45
26
16 15
14
23 22 21 24 25
19
8
17
18
4
5
2
1
9
10
6
7
1.32V
2.1V
9.2V
0.71V
1.45V
21.8V
13.0V
1.2V
1.58V
3.6V
3.0V
1.0V
L101 1.5/2.5mH
L102 1.5/25mH
L103 1.5/25mH
L104 1.5/25mH
1S2473VE
1S2473VE x2
1S2473VE x2
D202
D203
D204
D205
VR205 100K
Q101 ~ Q104
Q113 ~ Q136
Q221 ~ Q224
2SC828 x 32
Q105 ~ Q108
Q201 ~ Q212
2SC1344 x 16
Q109 ~ Q112 2SC1213 x 4
Q213 ~ Q220 2SK30A x 8

A
B
C
D
1
2
3
4
5
6

Foil side


RWF-052, No.38
RWF-052, No.37
RWX-121, No.16
RWX-121, No.23
RWR-031 No.33
RWX-121, No.17
RWX-121, No.18
RWX-121, No.22
RWX-121, No.19
P.B.H. (L) (2)
OUTPUT PLAY (L) (ch. 2)
BACK
OUTPUT PLAY (R) (ch. 4)
RWX-121, No.21
P.B.H. (R) (4)
12P socket (FRONT) No.8
12P socket (BACK) No.8
P.B.H. (L) (1)
RWA-024 No.3
OUTPUT PLAY (L) (ch. 1)
FRONT
OUTPUT PLAY (R) (ch. 3)
P.B.H. (R) (3)
RWF-052, No.39
RWF-052, No.40
RWA-024, No.10
INPUT REC (R) (ch. 3)
FRONT
INPUT REC (L) (ch. 1)
RWA-024, No.9
RWA-024, No.17
INPUT REC (R) (ch. 4)
BACK
INPUT REC (L) (ch. 2)
RWA-024, No.19
RWR-031, No.34
RWR-031, No.5
RWR-031, No.53
2SC828
2SC1213
2SC1344
2SK30A
B
C
E
D
G
S
L101 1.5/2.5mH
L102 1.5/2.5mH
L103 1.5/2.5mH
L104 1.5/2.5mH
VR101 33K
VR102 33K
VR103 33K
VR104 33K
VR105 33K
VR106 33K
VR201 100K
VR202 100K
VR203 100K
VR204 100K
VR205 100K
VR206 100K
VR207 22K
VR208 22K
VR209 47K
VR210 47K
VR211 47K
VR212 47K
1
2
3
4
5
6
A
B
C
D

Parts List of REC/PB Amplifier Assembly (RWF-044)

SEMICONDUCTORS

Symbol	Description	Part No.
Q101	Transistor	2SC828-R
Q102	Transistor	2SC828-R
Q103	Transistor	2SC828-R
Q104	Transistor	2SC828-R
Q105	Transistor	2SC1344-D
Q106	Transistor	2SC1344-D
Q107	Transistor	2SC1344-D
Q108	Transistor	2SC1344-D
Q109	Transistor	2SC1213-B
Q110	Transistor	2SC1213-B
Q111	Transistor	2SC1213-B
Q112	Transistor	2SC1213-B
Q113	Transistor	2SC828-R
Q114	Transistor	2SC828-R
Q115	Transistor	2SC828-R
Q116	Transistor	2SC828-R
Q117	Transistor	2SC828-R
Q118	Transistor	2SC828-R
Q119	Transistor	2SC828-R
Q120	Transistor	2SC828-R
Q121	Transistor	2SC828-R
Q122	Transistor	2SC828-R
Q123	Transistor	2SC828-R
Q124	Transistor	2SC828-R
Q125	Transistor	2SC828-R
Q126	Transistor	2SC828-R
Q127	Transistor	2SC828-R
Q128	Transistor	2SC828-R
Q129	Transistor	2SC828-R
Q130	Transistor	2SC828-R
Q131	Transistor	2SC828-R
Q132	Transistor	2SC828-R
Q133	Transistor	2SC828-R
Q134	Transistor	2SC828-R
Q135	Transistor	2SC828-R
Q136	Transistor	2SC828-R
Q201	Transistor	2SC1344-D
Q202	Transistor	2SC1344-D
Q203	Transistor	2SC1344-D
Q204	Transistor	2SC1344-D
Q205	Transistor	2SC1344-D
Q206	Transistor	2SC1344-D
Q207	Transistor	2SC1344-D
Q208	Transistor	2SC1344-D
Q209	Transistor	2SC1344-D
Q210	Transistor	2SC1344-D
Q211	Transistor	2SC1344-D
Q212	Transistor	2SC1344-D
Q213	FET	2SK30A-Y
Q214	FET	2SK30A-Y
Q215	FET	2SK30A-Y
Q216	FET	2SK30A-Y
Q217	FET	2SK30A-Y
Q218	FET	2SK30A-Y
Q219	FET	2SK30A-Y
Q220	FET	2SK30A-Y
Q221	Transistor	2SC828-R
Q222	Transistor	2SC828-R
Q223	Transistor	2SC828-R
Q224	Transistor	2SC828-R
D201	Diode	1S2473VE
D202	Diode	1S2473VE
D203	Diode	1S2473VE
D204	Diode	1S2473VE
D205	Diode	1S2473VE

COIL

Symbol	Description	Part No.
L101	Peaking coil	RTF-014
L102	Peaking coil	RTF-014
L103	Peaking coil	RTF-014
L104	Peaking coil	RTF-014

RESISTORS

Symbol	Description		Part No.
VR101	Semi-fixed	33k-B	RCP-025
VR102	Semi-fixed	33k-B	RCP-025
VR103	Semi-fixed	33k-B	RCP-025
VR104	Semi-fixed	33k-B	RCP-025
VR105	Semi-fixed	33k-B	RCP-025
VR106	Semi-fixed	33k-B	RCP-025
VR201	Semi-fixed	100k-B	RCP-027
VR202	Semi-fixed	100k-B	RCP-027
VR203	Semi-fixed	100k-B	RCP-027
VR204	Semi-fixed	100k-B	RCP-027
VR205	Semi-fixed	100k-B	RCP-027
VR206	Semi-fixed	100k-B	RCP-027
VR207	Semi-fixed	22k-B	RCP-024
VR208	Semi-fixed	22k-B	RCP-024
VR209	Semi-fixed	47k-B	RCP-026
VR210	Semi-fixed	47k-B	RCP-026
VR211	Semi-fixed	47k-B	RCP-026
VR212	Semi-fixed	47k-B	RCP-026

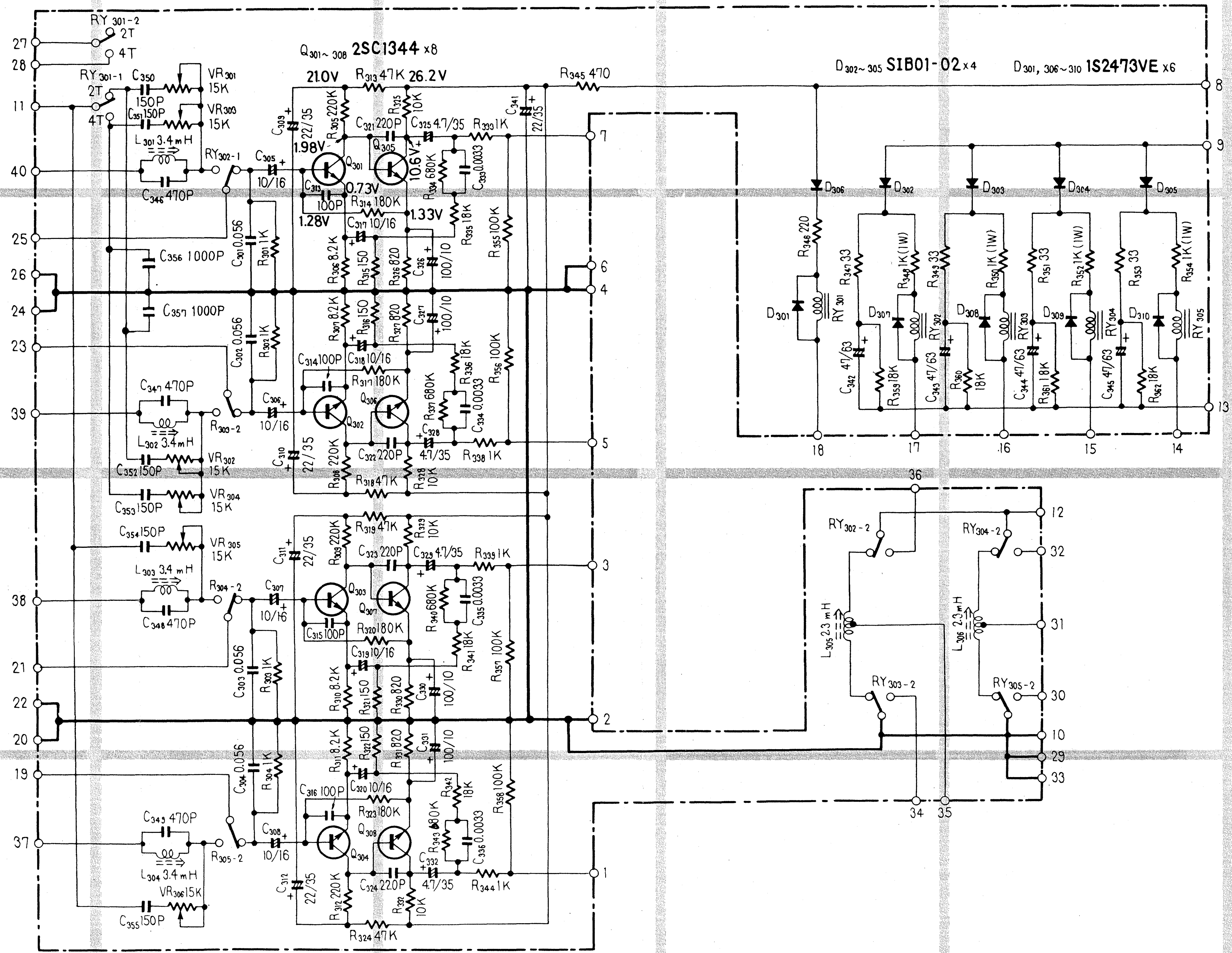
Symbol	Description		Part No.
R101	Carbon film	22k	RD¼VS 223J
R102	Carbon film	22k	RD¼VS 223J
R103	Carbon film	22k	RD¼VS 223J
R104	Carbon film	22k	RD¼VS 223J
R105	Carbon film	47k	RD¼VS 473J
R106	Carbon film	47k	RD¼VS 473J
R107	Carbon film	47k	RD¼VS 473J
R108	Carbon film	47k	RD¼VS 473J
R109	Carbon film	56k	RD¼VS 563J
R110	Carbon film	1.5k	RD¼VS 152J
R111	Carbon film	1.5k	RD¼VS 152J
R112	Carbon film	56k	RD¼VS 563J
R113	Carbon film	56k	RD¼VS 563J
R114	Carbon film	1.5k	RD¼VS 152J
R115	Carbon film	1.5k	RD¼VS 152J
R116	Carbon film	56k	RD¼VS 563J
R117	Carbon film	3.9k	RD¼VS 392J
R118	Carbon film	100k	RD¼VS 104J
R119	Carbon film	270	RD¼VS 271J
R120	Carbon film	270	RD¼VS 271J
R121	Carbon film	100k	RD¼VS 104J
R122	Carbon film	3.9k	RD¼VS 392J
R123	Carbon film	3.9k	RD¼VS 392J
R124	Carbon film	100k	RD¼VS 104J
R125	Carbon film	270	RD¼VS 271J
R126	Carbon film	270	RD¼VS 271J
R127	Carbon film	100k	RD¼VS 104J
R128	Carbon film	3.9k	RD¼VS 392J
R129	········	···	RD¼VS 105J
R130	Carbon film	33k	RD¼VS 333J
R131	Carbon film	33k	RD¼VS 333J
R132	········	···	RD¼VS 105J
R133	········	···	RD¼VS 105J
R134	Carbon film	33k	RD¼VS 333J
R135	Carbon film	33k	RD¼VS 333J
R136	········	···	RD¼VS 105J
R137	Carbon film	1k	RD¼VS 102J
R138	Carbon film	1k	RD¼VS 102J
R139	Carbon film	1k	RD¼VS 102J
R140	Carbon film	1k	RD¼VS 102J
R141	Carbon film	1k	RD¼VS 102J
R142	Carbon film	1.2k	RD¼VS 122J
R143	Carbon film	1.5k	RD¼VS 152J
R144	Carbon film	220	RD¼VS 221J
R145	Carbon film	100	RD¼VS 101J
R146	Carbon film	15	RD¼VS 150J
R147	Carbon film	15	RD¼VS 150J
R148	Carbon film	100	RD¼VS 101J
R149	Carbon film	220	RD¼VS 221J
R150	Carbon film	1.5k	RD¼VS 152J
R151	Carbon film	1.2k	RD¼VS 122J
R152	Carbon film	1k	RD¼VS 102J
R153	Carobn film	1k	RD¼VS 102J
R154	Carbon film	1.2k	RD¼VS 122J
R155	Carbon film	1.5k	RD¼VS 152J
R156	Carbon film	220	RD¼VS 221J
R157	Carbon film	100	RD¼VS 101J
R158	Carbon film	15	RD¼VS 150J
R159	Carbon film	15	RD¼VS 150J
R160	Carbon film	100	RD¼VS 101J
R161	Carbon film	220	RD¼VS 221J
R162	Carbon film	1.5k	RD¼VS 152J
R163	Carbon film	1.2k	RD¼VS 122J
R164	Carbon film	1k	RD¼VS 102J
R165	Carbon film	47k	RD¼VS 473J
R166	Carbon film	47k	RD¼VS 473J
R167	Carbon film	47k	RD¼VS 473J
R168	Carbon film	47k	RD¼VS 473J
R169	Carbon film	47k	RD¼VS 473J
R170	Carbon film	47k	RD¼VS 473J
R171	Carbon film	47k	RD¼VS 473J
R172	Carbon film	47k	RD¼VS 473J
R173	Carbon film	47k	RD¼VS 473J
R174	Carbon film	47k	RD¼VS 473J
R175	Carbon film	47k	RD¼VS 473J
R176	Carbon film	47k	RD¼VS 473J
R177	Carbon film	47k	RD¼VS 473J
R178	Carbon film	47k	RD¼VS 473J
R179	Carbon film	47k	RD¼VS 473J
R180	Carbon film	47k	RD¼VS 473J
R181	Carbon film	47k	RD¼VS 473J
R182	Carbon film	47k	RD¼VS 473J
R183	Carbon film	47k	RD¼VS 473J
R184	Carbon film	47k	RD¼VS 473J
R185	Carbon film	47k	RD¼VS 473J
R186	Carbon film	47k	RD¼VS 473J
R187	Carbon film	47k	RD¼VS 473J
R188	Carbon film	47k	RD¼VS 473J
R201	Carbon film	180k	RD¼VS 184J
R202	Carbon film	10k	RD¼VS 103J
R203	Carbon film	10k	RD¼VS 103J
R204	Carbon film	180k	RD¼VS 184J
R205	Carbon film	180k	RD¼VS 184J
R206	Carbon film	10k	RD¼VS 103J
R207	Carbon film	10k	RD¼VS 103J
R208	Carbon film	180k	RD¼VS 103J
R209	Carbon film	2.7M	RD¼VS 275J
R210	Carbon film	220k	RD¼VS 224J
R211	Carbon film	390	RD¼VS 391J
R212	Carbon film	390	RD¼VS 391J

Symbol	Description		Part No.
R213	Carbon film	220k	RD¼VS 224J
R214	Carbon film	2.7M	RD¼VS 275J
R215	Carbon film	2.7M	RD¼VS 275J
R216	Carbon film	220k	RD¼VS 224J
R217	Carbon film	390	RD¼VS 391J
R218	Carbon film	390	RD¼VS 391J
R219	Carbon film	220k	RD¼VS 224J
R220	Carbon film	2.7M	RD¼VS 275J
R221	Carbon film	6.2k	RD¼VS 622J
R222	Carbon film	5.1k	RD¼VS 512J
R223	Carbon film	5.1k	RD¼VS 512J
R224	Carbon film	6.2k	RD¼VS 622J
R225	Carbon film	6.2k	RD¼VS 622J
R226	Carbon film	5.1k	RD¼VS 512J
R227	Carbon film	5.1k	RD¼VS 512J
R228	Carbon film	6.2k	RD¼VS 622J
R229	Carbon film	18k	RD¼VS 183J
R230	Carbon film	18k	RD¼VS 183J
R231	Carbon film	18k	RD¼VS 183J
R232	Carbon film	18k	RD¼VS 183J
R233	Carbon film	10k	RD¼VS 103J
R234	Carbon film	1.8k	RD¼VS 182J
R235	Carbon film	1.8k	RD¼VS 182J
R236	Carbon film	10k	RD¼VS 103J
R237	Carbon film	10k	RD¼VS 103J
R238	Carbon film	1.8k	RD¼VS 182J
R239	Carbon film	1.8k	RD¼VS 182J
R240	Carbon film	10k	RD¼VS 103J
R241	Carbon film	100k	RD¼VS 104J
R242	Carbon film	100k	RD¼VS 104J
R243	Carbon film	100k	RD¼VS 104J
R244	Carbon film	100k	RD¼VS 104J
R245	Carbon film	1M	RD¼VS 105J
R246	Carbon film	1M	RD¼VS 105J
R247	Carbon film	1M	RD¼VS 105J
R248	Carbon film	1M	RD¼VS 105J
R249	Carbon film	2.2M	RD¼VS 225J
R250	Carbon film	2.2M	RD¼VS 225J
R251	Carbon film	2.2M	RD¼VS 225J
R252	Carbon film	2.2M	RD¼VS 225J
R253	Carbon film	1M	RD¼VS 105J
R254	Carbon film	1M	RD¼VS 105J
R255	Carbon film	12k	RD¼VS 123J
R256	Carbon film	12k	RD¼VS 123J
R257	Carbon film	12k	RD¼VS 123J
R258	Carbon film	12k	RD¼VS 123J
R259	Carbon film	1M	RD¼VS 105J
R260	Carbon film	1M	RD¼VS 105J
R261	Carbon film	47k	RD¼VS 473J
R262	Carbon film	47k	RD¼VS 473J
R263	Carbon film	47k	RD¼VS 473J
R264	Carbon film	47k	RD¼VS 473J
R265	Carbon film	33k	RD¼VS 333J
R266	Carbon film	33k	RD¼VS 333J
R267	Carbon film	100k	RD¼VS 104J
R268	Carbon film	100k	RD¼VS 104J
R269	Carbon film	100k	RD¼VS 104J
R270	Carbon film	33k	RD¼VS 333J

CAPACITORS

Symbol	Description			Part No.
C101	Mylar	0.047	50 V	CQMA 473K 50
C102	Mylar	0.047	50 V	CQMA 473K 50
C103	Mylar	0.047	50 V	CQMA 473K 50
C104	Mylar	0.047	50 V	CQMA 473K 50
C105	Electrolytic	4.7	35 V	CEA 4R7P 35
C106	Electrolytic	4.7	35 V	CEA 4R7P 35
C107	Electrolytic	4.7	35 V	CEA 4R7P 35
C108	Electrolytic	4.7	35 V	CEA 4R7P 35
C109	Polystyrene	47p	50 V	RCE-012
C110	Electrolytic	47	10 V	CEA 470P 10
C111	Electrolytic	47	10 V	CEA 470P 10
C112	Polystyrene	47p	50 V	RCE-012
C113	Polystyrene	47p	50 V	RCE-012
C114	Electrolytic	47	10V	CEA 470P 10
C115	Electrolytic	47	10 V	CEA 470P 10
C116	Polystyrene	47p	50 V	RCE-012
C117	Electrolytic	4.7	35 V	CEA 4R7P 35
C118	Mylar	0.068	50 V	CQMA 683K 50
C119	Mylar	0.068	50 V	CQMA 683K 50
C120	Electrolytic	4.7	35 V	CEA 4R7P 35
C121	Electrolytic	4.7	35 V	CEA 4R7P 35
C122	Mylar	0.068	50 V	CQMA 683K 50
C123	Mylar	0.068	50 V	CQMA 683K 50
C124	Electrolytic	4.7	35 V	CEA 4R7P 35
C125	Mylar	0.047	50 V	CQMA 473K 50
C126	Mylar	0.022	50 V	CQMA 223K 50
C127	Mylar	0.0056	50 V	CQMA 562K 50
C128	Mylar	0.01	50 V	CQMA 103K 50
C129	Mylar	0.015	50 V	CQMA 153K 50
C130	Mylar	0.027	50 V	CQMA 273K 50
C131	Mylar	0.027	50 V	CQMA 273K 50
C132	Mylar	0.015	50 V	CQMA 153K 50
C133	Mylar	0.01	50 V	CQMA 103K 50
C134	Mylar	0.0056	50 V	CQMA 562K 50
C135	Mylar	0.022	50 V	CQMA 223K 50
C136	Mylar	0.047	50 V	CQMA 473K 50
C137	Mylar	0.047	50 V	CQMA 473K 50
C138	Mylar	0.022	50 V	CQMA 223K 50
C139	Mylar	0.0056	50 V	CQMA 562K 50
C140	Mylar	0.01	50 V	CQMA 103K 50
C141	Mylar	0.015	50 V	CQMA 153K 50
C142	Mylar	0.027	50 V	CQMA 273K 50
C143	Mylar	0.027	50 V	CQMA 273K 50
C144	Mylar	0.015	50 V	CQMA 153K 50
C145	Mylar	0.01	50 V	CQMA 103K 50
C146	Mylar	0.0056	50 V	CQMA 562K 50
C147	Mylar	0.022	50 V	CQMA 223K 50
C148	Mylar	0.047	50 V	CQMA 473K 50
C149	Mylar	0.047	50 V	CQMA 473K 50
C150	Mylar	0.047	50 V	CQMA 473K 50
C151	Mylar	0.047	50 V	CQMA 473K 50
C152	Mylar	0.047	50 V	CQMA 473K 50
C153	Mylar	0.047	50 V	CQMA 473K 50
C154	Mylar	0.047	50 V	CQMA 473K 50
C155	Mylar	0.047	50 V	CQMA 473K 50
C156	Mylar	0.047	50 V	CQMA 473K 50
C157	Mylar	0.047	50 V	CQMA 473K 50
C158	Mylar	0.047	50 V	CQMA 473K 50
C159	Mylar	0.047	50 V	CQMA 473K 50
C160	Mylar	0.047	50 V	CQMA 473K 50
C161	Mylar	0.047	50 V	CQMA 473K 50
C162	Mylar	0.047	50 V	CQMA 473K 50
C163	Mylar	0.047	50 V	CQMA 473K 50
C164	Mylar	0.047	50 V	CQMA 473K 50
C165	Mylar	0.047	50 V	CQMA 473K 50
C166	Mylar	0.047	50 V	CQMA 473K 50
C167	Mylar	0.047	50 V	CQMA 473K 50
C168	Mylar	0.047	50 V	CQMA 473K 50
C169	Mylar	0.047	50 V	CQMA 473K 50
C170	Mylar	0.047	50 V	CQMA 473K 50
C171	Mylar	0.047	50 V	CQMA 473K 50
C172	Mylar	0.047	50 V	CQMA 473K 50
C201	Polystyrene	68p	50 V	RCE-023
C202	Polystyrene	68p	50 V	RCE-023
C203	Polystyrene	68p	50 V	RCE-023
C204	Polystyrene	68p	50 V	RCE-023
C205	Electrolytic	10	16 V	RCH-018
C206	Electrolytic	10	16 V	RCH-018
C207	Electrolytic	10	16 V	RCH-018
C208	Electrolytic	10	16 V	RCH-018
C209	Electrolytic	100	25 V	CEA 101P 25
C210	Electrolytic	100	25 V	CEA 101P 25
C211	Electrolytic	100	25 V	CEA 101P 25
C212	Electrolytic	100	25 V	CEA 101P 25
C213	Polystyrene	100p	50 V	RCE-003
C214	Polystyrene	100p	50 V	RCE-003
C215	Polystyrene	100p	50 V	RCE-003
C216	Polystyrene	100p	50 V	RCE-003
C217	Polystyrene	22p	50 V	RCE-019
C218	Electrolytic	47	10 V	CEA 470P 10
C219	Electrolytic	47	10 V	CEA 470P 10
C220	Polystyrene	22p	50 V	RCE-019
C221	Polystyrene	22p	50 V	RCE-019
C222	Electrolytic	47	10 V	CEA 470P 10
C223	Electrolytic	47	10 V	CEA 470P 10
C224	Polystyrene	22p	50 V	RCE-019
C225	Electrolytic	100	10 V	CEA 101P 10
C226	Electrolytic	100	10 V	CEA 101P 10
C227	Electrolytic	100	10 V	CEA 101P 10
C228	Electrolytic	100	10 V	CEA 101P 10
C229	Electrolytic	4.7	35 V	CEA 4R7P 35
C230	Electrolytic	4.7	35 V	CEA 4R7P 35
C231	Electrolytic	4.7	35 V	CEA 4R7P 35
C232	Electrolytic	4.7	35 V	CEA 4R7P 35
C233	Mylar	0.047	50 V	CQMA 473K 50
C234	Mylar	0.047	50 V	CQMA 473K 50
C235	Mylar	0.047	50 V	CQMA 473K 50
C236	Mylar	0.047	50 V	CQMA 473K 50
C237	Mylar	0.0015	50 V	CQMA 152K 50
C238	Mylar	0.0015	50 V	CQMA 152K 50
C239	Mylar	0.0015	50 V	CQMA 152K 50
C240	Mylar	0.0015	50 V	CQMA 152K 50
C241	Mylar	0.047	50 V	CQMA 473K 50
C242	Mylar	0.047	50 V	CQMA 473K 50
C243	Mylar	0.047	50 V	CQMA 473K 50
C244	Mylar	0.047	50 V	CQMA 473K 50
C245	Mylar	0.047	50 V	CQMA 473K 50
C246	Mylar	0.047	50 V	CQMA 473K 50
C247	Mylar	0.047	50 V	CQMA 473K 50
C248	Mylar	0.047	50 V	CQMA 473K 50

16.10 SYNCRO AMPLIFIER ASSEMBLY (RWF-052)


Q301~308 2SC1344 x8
D302~305 S1B01-02 x4
D301, 306~310 1S2473VE x6
RY301-2
2T
4T
RY301-1
C350 150P
VR301 15K
C351 150P
VR303 15K
L301 3.4mH
C346 470P
RY302-1
C305 10/16
C309 22/35
R305 220K
21.0V
R313 47K
26.2V
R315 10K
1.98V
C321 220P
C325 47/35
R333 1K
C341 22/35
R345 470
Q301
Q305
10.6V
0.73V
C313 100P
R314 180K
1.28V
C317 10/16
1.33V
R334 680K
C333 0.0033
R335 18K
R355 100K
C301 0.056
R301 1K
C356 1000P
C357 1000P
R306 8.2K
R325 150
R326 820
C326 100/10
R307 8.2K
R316 150
R327 820
C327 100/10
C302 0.056
R302 1K
C314 100P
C318 10/16
R317 180K
R336 18K
R356 100K
R337 680K
C334 0.0033
C347 470P
L302 3.4mH
R303-2
C306 10/16
Q302
Q306
C310 22/35
R308 220K
C322 220P
C328 47/35
R338 1K
R318 47K
R319 10K
VR302 15K
C352 150P
C353 150P
VR304 15K
C354 150P
VR305 15K
L303 3.4mH
C348 470P
R304-2
C307 10/16
C311 22/35
R309 220K
R319 47K
R329 10K
C323 220P
C329 47/35
R339 1K
Q303
Q307
R340 680K
C335 0.0033
C315 100P
R320 180K
C319 10/16
R341 18K
R357 100K
C303 0.056
R303 1K
R310 8.2K
R321 150
R330 820
C330 100/10
R311 8.2K
R322 150
R331 820
C331 100/10
C304 0.056
R304 1K
C316 100P
C320 10/16
R342 18K
R358 100K
R323 180K
C349 470P
L304 3.4mH
R305-2
C308 10/16
Q304
Q308
R343 680K
C336 0.0033
C332 47/35
R344 1K
C312 22/35
R312 220K
C324 220P
R332 10K
VR306 15K
C355 150P
R324 47K
D306
D302
D303
D304
D305
R346 220
D301
RY301
R347 33
R348 1K (1W)
D307
RY302
C342 47/63
R359 18K
R349 33
R350 1K (1W)
D308
RY303
C343 47/63
R360 18K
R351 33
R352 1K (1W)
D309
RY304
C344 47/63
R361 18K
R353 33
R354 1K (1W)
D310
RY305
C345 47/63
R362 18K
RY302-2
RY304-2
L305 2.3mH
L306 2.3mH
RY303-2
RY305-2
27
28
11
40
25
26
24
23
39
38
21
22
20
19
37
7
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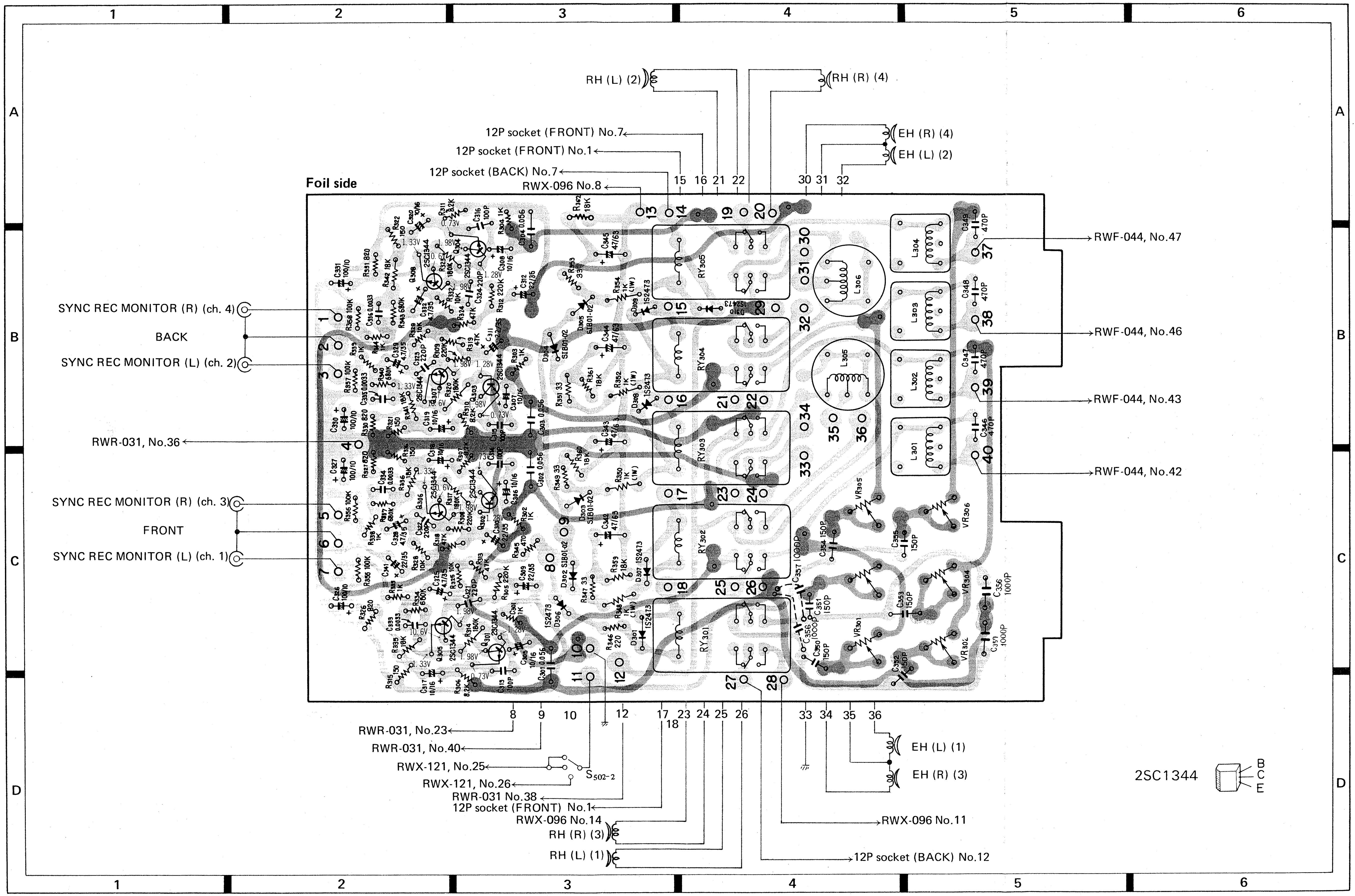

Foil side
RH (L) (2)
RH (R) (4)
12P socket (FRONT) No.7
12P socket (FRONT) No.1
12P socket (BACK) No.7
RWX-096 No.8
EH (R) (4)
EH (L) (2)
SYNC REC MONITOR (R) (ch. 4)
BACK
SYNC REC MONITOR (L) (ch. 2)
RWR-031, No.36
SYNC REC MONITOR (R) (ch. 3)
FRONT
SYNC REC MONITOR (L) (ch. 1)
RWF-044, No.47
RWF-044, No.46
RWF-044, No.43
RWF-044, No.42
RY301
RY302
RY303
RY304
RY305
L301
L302
L303
L304
L305
L306
VR301
VR302
VR304
VR305
VR306
RWR-031, No.23
RWR-031, No.40
RWX-121, No.25
RWX-121, No.26
S502-2
RWR-031 No.38
12P socket (FRONT) No.1
RWX-096 No.14
RH (R) (3)
RH (L) (1)
RWX-096 No.11
12P socket (BACK) No.12
EH (L) (1)
EH (R) (3)
2SC1344
B
C
E
1
2
3
4
5
6
A
B
C
D

Parts List of Syncro Amplifier Assembly (RWF-052)

SEMICONDUCTOR

Symbol	Description	Part No.
Q301	Transistor	2SC1344-D
Q302	Transistor	2SC1344-D
Q303	Transistor	2SC1344-D
Q304	Transistor	2SC1344-D
Q305	Transistor	2SC1344-D
Q306	Transistor	2SC1344-D
Q307	Transistor	2SC1344-D
Q308	Transistor	2SC1344-D
D301	Diode	1S2473VE
D302	Diode	SIB01-02
D303	Diode	SIB01-02
D304	Diode	SIB01-02
D305	Diode	SIB01-02
D306	Diode	1S2473VE
D307	Diode	1S2473VE
D308	Diode	1S2473VE
D309	Diode	1S2473VE
D310	Diode	1S2473VE

RESISTORS

Symbol	Description	Part No.
R301	Carbon film 1k	RD¼VS 102J
R302	Carbon film 1k	RD¼VS 102J
R303	Carbon film 1k	RD¼VS 102J
R304	Carbon film 1k	RD¼VS 102J
R305	Carbon film 220k	RD¼VS 224J
R306	Carbon film 8.2k	RD¼VS 822J
R307	Carbon film 8.2k	RD¼VS 822J
R308	Carbon film 220k	RD¼VS 224J
R309	Carbon film 220k	RD¼VS 224J
R310	Carbon film 8.2k	RD¼VS 822J
R311	Carbon film 8.2k	RD¼VS 822J
R312	Carbon film 220k	RD¼VS 224J
R313	Carbon film 47k	RD¼VS 473J
R314	Carbon film 180k	RD¼VS 184J
R315	Carbon film 150	RD¼VS 151J
R316	Carbon film 150	RD¼VS 151J
R317	Carbon film 180k	RD¼VS 184J
R318	Carbon film 47k	RD¼VS 473J
R319	Carbon film 47k	RD¼VS 473J
R320	Carbon film 180k	RD¼VS 184J
R321	Carbon film 150	RD¼VS 151J
R322	Carbon film 150	RD¼VS 151J
R323	Carbon film 180k	RD¼VS 184J
R324	Carbon film 47k	RD¼VS 473J
R325	Carbon film 10k	RD¼VS 103J

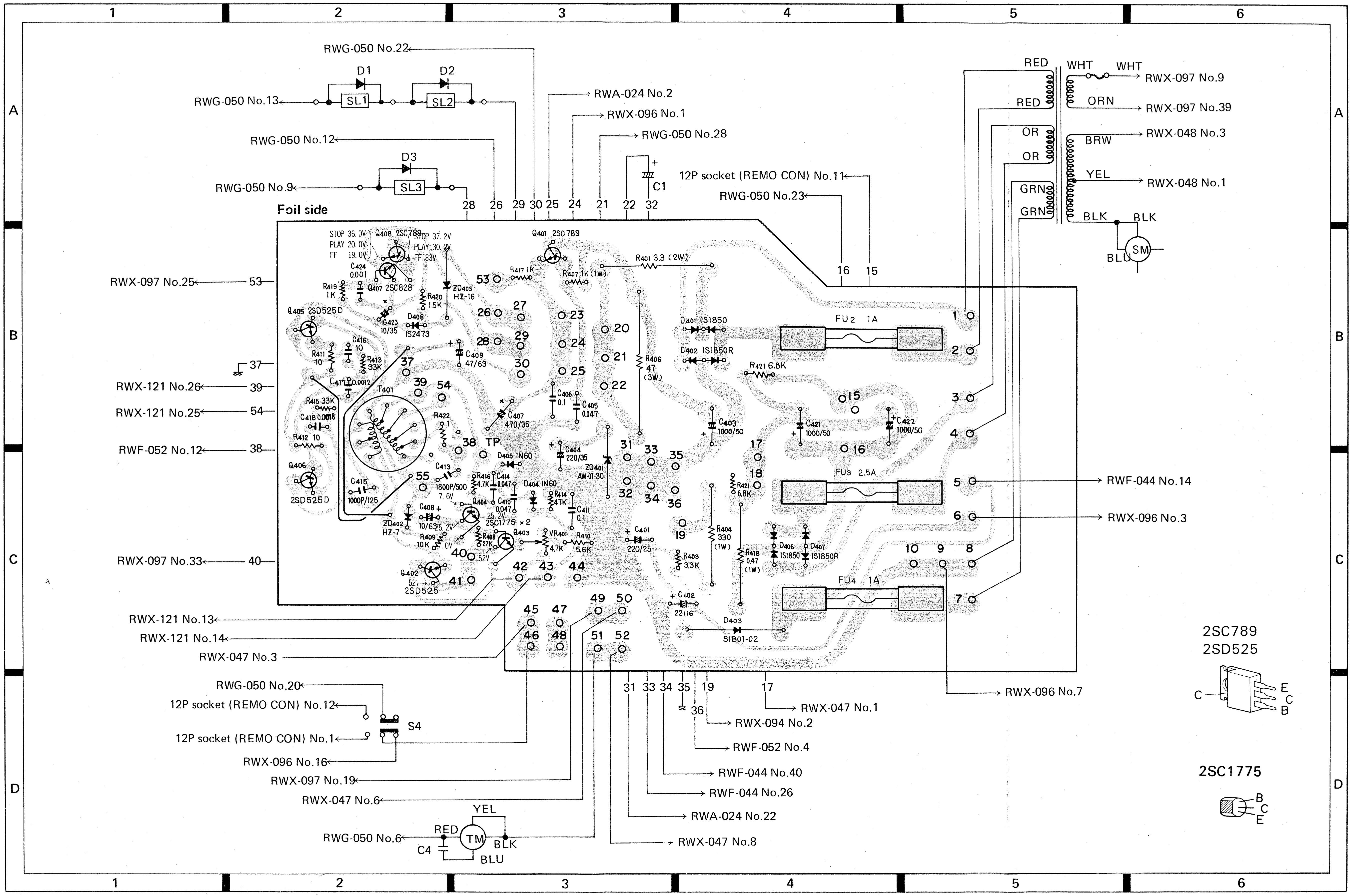
Symbol	Description	Part No.
R326	Carbon film 820	RD¼VS 821J
R327	Carbon film 820	RD¼VS 821J
R328	Carbon film 10k	RD¼VS 103J
R329	Carbon film 10k	RD¼VS 103J
R330	Carbon film 820	RD¼VS 821J
R331	Carbon film 820	RD¼VS 821J
R332	Carbon film 10k	RD¼VS 103J
R333	Carbon film 1k	RD¼VS 102J
R334	Carbon film 680k	RD¼VS 684J
R335	Carbon film 18k	RD¼VS 183J
R336	Carbon film 18k	RD¼VS 183J
R337	Carbon film 680k	RD¼VS 684J
R338	Carbon film 1k	RD¼VS 102J
R339	Carbon film 1k	RD¼VS 102J
R340	Carbon film 680k	RD¼VS 684J
R341	Carbon film 18k	RD¼VS 183J
R342	Carbon film 18k	RD¼VS 183J
R343	Carbon film 680k	RD¼VS 684J
R344	Carbon film 1k	RD¼VS 102J
R345	Carbon film 470	RD¼VS 471J
R346	Carbon film 220	RD¼VS 221J
R347	Carbon film 33	RD¼VS 330J
R348	Metal oxide 1k 1W	RS1P 102J
R349	Carbon film 33	RD¼VS 330J
R350	Metal oxide 1k 1W	RS1P 102J
R351	Carbon film 33	RD¼VS 330J
R352	Metal oxide 1k 1W	RS1P 102J
R353	Carbon film 33	RD¼VS 330J
R354	Metal oxide 1k 1W	RS1P 102J
R355	Carbon film 100k	RD¼VS 104J
R356	Carbon film 100k	RD¼VS 104J
R357	Carbon film 100k	RD¼VS 104J
R358	Carbon film 100k	RD¼VS 104J
R359	Carbon film 18k	RD¼VS 183J
R360	Carbon film 18k	RD¼VS 183J
R361	Carbon film 18k	RD¼VS 183J
R362	Carbon film 18k	RD¼VS 183J
VR301	Semi-fixed 15k-B	RCP-023
VR302	Semi-fixed 15k-B	RCP-023
VR303	Semi-fixed 15k-B	RCP-023
VR304	Semi-fixed 15k-B	RCP-023
VR305	Semi-fixed 15k-B	RCP-023
VR306	Semi-fixed 15k-B	RCP-023

CAPACITORS

Symbol	Description	Part No.
C301	Mylar 0.056 50V	CQMA 563K 50
C302	Mylar 0.056 50V	CQMA 563K 50
C303	Mylar 0.056 50V	CQMA 563K 50
C304	Mylar 0.056 50V	CQMA 563K 50
C305	Electrolytic 10 16V	RCH-018
C306	Electrolytic 10 16V	RCH-018
C307	Electrolytic 10 16V	RCH-018
C308	Electrolytic 10 16V	RCH-018
C309	Electrolytic 22 35V	CEA 220P 35
C310	Electrolytic 22 35V	CEA 220P 35
C311	Electrolytic 22 35V	CEA 220P 35
C312	Electrolytic 22 35V	CEA 220P 35
C313	Polystyrene 100p 50V	RCE-003
C314	Polystyrene 100p 50V	RCE-003
C315	Polystyrene 100p 50V	RCE-003
C316	Polystyrene 100p 50V	RCE-003
C317	Electrolytic 10 16V	CEA 100P 16
C318	Electrolytic 10 16V	CEA 100P 16
C319	Electrolytic 10 16V	CEA 100P 16
C320	Electrolytic 10 16V	CEA 100P 16
C321	Polystyrene 220p 50V	RCE-006
C322	Polystyrene 220p 50V	RCE-006
C323	Polystyrene 220p 50V	RCE-006
C324	Polystyrene 220p 50V	RCE-006
C325	Electrolytic 4.7 35V	CEA 4R7P 35
C326	Electrolytic 100 10V	CEA 101P 10
C327	Electrolytic 100 10V	CEA 101P 10
C328	Electrolytic 4.7 35V	CEA 4R7P 35
C329	Electrolytic 4.7 35V	CEA 4R7P 35
C330	Electrolytic 100 10V	CEA 101P 10
C331	Electrolytic 100 10V	CEA 101P 10
C332	Electrolytic 4.7 35V	CEA 4R7P 35
C333	Mylar 0.0033 50V	CQMA 332K 50
C334	Mylar 0.0033 50V	CQMA 332K 50
C335	Mylar 0.0033 50V	CQMA 332K 50
C336	Mylar 0.0033 50V	CQMA 332K 50
C341	Electrolytic 22 35V	CEA 220P 35
C342	Electrolytic 47 63V	CEA 470P 63
C343	Electrolytic 47 63V	CEA 470P 63
C344	Electrolytic 47 63V	CEA 470P 63
C345	Electrolytic 47 63V	CEA 470P 63
C346	Polystyrene 470p 50V	RCE-014
C347	Polystyrene 470p 50V	RCE-014
C348	Polystyrene 470p 50V	RCE-014
C349	Polystyrene 470p 50V	RCE-014
C350	Polystyrene 150p 50V	RCE-007
C351	Polystyrene 150p 50V	RCE-007
C352	Polystyrene 150p 50V	RCE-007
C353	Polystyrene 150p 50V	RCE-007
C354	Polystyrene 150p 50V	RCE-007
C355	Polystyrene 150p 50V	RCE-007
C356	Polystyrene 1000p 50V	RCE-011
C357	Polystyrene 1000p 50V	RCE-011

OTHERS

Symbol	Description	Part No.
RY301	Relay	RSR-019
RY302	Relay	RSR-019
RY303	Relay	RSR-019
RY304	Relay	RSR-019
RY305	Relay	RSR-019
L301	Trap coil	RTF-013
L302	Trap coil	RTF-013
L303	Trap coil	RTF-013
L304	Trap coil	RTF-013
L305	Dummy coil	RTD-009
L306	Dummy coil	RTD-009


Foil side
RWG-050 No.22
RWG-050 No.13
RWG-050 No.12
RWG-050 No.9
D1
D2
D3
SL1
SL2
SL3
RWA-024 No.2
RWX-096 No.1
RWG-050 No.28
C1
12P socket (REMO CON) No.11
RWG-050 No.23
28 26 29 30 25 24 21 22 32
16 15
RED
WHT
WHT
RWX-097 No.9
RED
ORN
RWX-097 No.39
OR
BRW
RWX-048 No.3
OR
YEL
RWX-048 No.1
GRN
GRN
BLK
BLK
BLU
SM
RWX-097 No.25
RWX-121 No.26
RWX-121 No.25
RWF-052 No.12
RWX-097 No.33
53
37
39
54
38
40
STOP 36.0V
PLAY 20.0V
FF 19.0V
Q408 2SC789
STOP 37.2V
PLAY 30.2V
FF 33V
Q407 2SC828
Q401 2SC789
Q405 2SD525D
Q406 2SD525D
Q402 2SD525
Q403
Q404
2SC1775 ×2
T401
TP
ZD403 HZ-16
ZD402 HZ-7
ZD401 AW-01-30
D408 IS2473
D405 1N60
D404 1N60
D401 IS1850
D402 IS1850R
D406 IS1850
D407 IS1850R
D403 SIB01-02
R401 3.3 (2W)
R407 1K (1W)
R417 1K
R406 47 (3W)
R404 330 (1W)
R418 0.47 (1W)
R421 6.8K
R403 3.3K
C403 1000/50
C421 1000/50
C422 1000/50
C401 220/25
C402 22/16
C404 220/35
C407 470/35
C409 47/63
C423 10/35
C406 0.1
C405 0.047
C413 1800P/500
C415 1000P/125
FU2 1A
FU3 2.5A
FU4 1A
1 2 3 4 5 6 7 8 9 10
RWF-044 No.14
RWX-096 No.3
RWX-096 No.7
RWX-121 No.13
RWX-121 No.14
RWX-047 No.3
41 42 43 44 45 46 47 48 49 50 51 52
RWG-050 No.20
12P socket (REMO CON) No.12
S4
12P socket (REMO CON) No.1
RWX-096 No.16
RWX-097 No.19
RWX-047 No.6
RWG-050 No.6
RED
YEL
TM
BLK
BLU
C4
31 33 34 35 19 17 36
RWX-047 No.1
RWX-094 No.2
RWF-052 No.4
RWF-044 No.40
RWF-044 No.26
RWA-024 No.22
RWX-047 No.8
2SC789
2SD525
C E C B
2SC1775
B C E
1 2 3 4 5 6
A B C D

Parts List of Power Supply & O.S.C. Assembly (RWR-031)

SEMICONDUCTORS

Symbol	Description	Part No.
Q401	Transistor	2SC789-0
Q402	Transistor	2SD525-0
Q403	Transistor	2SC1775-E
Q404	Transistor	2SC1775-E
Q405	Transistor	2SD525-0
Q406	Transistor	2SD525-0
Q407	Transistor	2SC828-R
Q408	Transistor	2SC789-0
D401	Diode	1S1850
D402	Diode	1S1850R
D403	Diode	SIB01-02
D404	Diode	1N60
D405	Diode	1N60
D406	Diode	1S1850
D407	Diode	1S1850R
D408	Diode	1S2473VE
ZD401	Zener diode	AW-01-30
ZD402	Zener diode	HZ7-B
ZD403	Zener diode	HZ16

RESISTORS

Symbol	Description			Part No.
VR401	Semi-fixed 4.7k-B			C92-051
R401	Metal film	3.3	2W	RN2PSF 3R3K
R403	Carbon film	3.3k		RD¼VS 332J
R404	Metal oxide	330	1W	RS1P 331J
R406	Metal oxide	47	3W	RS3PSF 470J
R407	Metal oxide	1k	1W	RS1P 102J
R408	Carbon film	27k		RD¼VS 273J
R409	Carbon film	10k		RD¼VS 103J
R410	Carbon film	5.2k		RD¼VS 562J
R411	Carbon film	10		RD¼VS 100J
R412	Carbon film	10		RD¼VS 100J
R413	Carbon film	33k		RD¼VS 333J
R414	Carbon film	47k		RD¼VS 473J
R415	Carbon film	33k		RD¼VS 333J
R416	Carbon film	4.7k		RD¼VS 472J
R417	Carbon film	1k		RD¼VS 102J
R418	Metal film	0.47	1W	RN1PSF R47K
R419	Carbon film	1k		RD¼VS 102J
R420	Carbon film	1.5k		RD¼VS 152J
R421	Carbon film	6.8k		RD¼VS 682J
R422	Carbon film	1		RD¼VS 010J

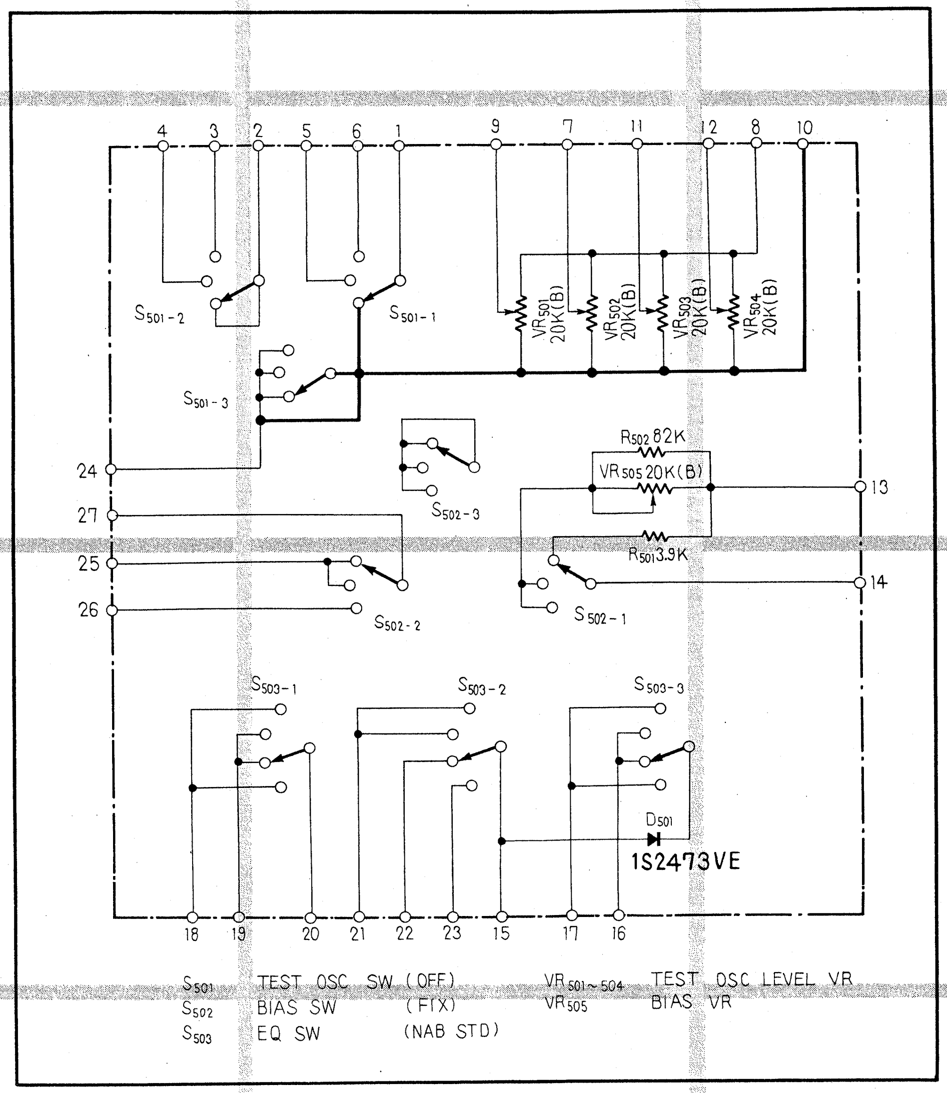
CAPACITORS

Symbol	Description			Part No.
C401	Electrolytic	220	25V	CEA 221P 25
C402	Electrolytic	22	16V	CEA 220P 16
C404	Electrolytic	220	35V	CEA 221P 35
C405	Mylar	0.047	50V	CQMA 473K 50
C406	Mylar	0.1	50V	CQMA 104K 50
C407	Electrolytic	470	35V	CEA 471P 35
C408	Electrolytic	10	63V	CEA 100P 63
C409	Electrolytic	47	63V	CEA 470P 63
C410	Mylar	0.047	50V	CQMA 473K 50
C411	Mylar	0.1	50V	CQMA 104K 50
C413	Polystyrene	1800p	500V	CQSA 182J 500
C414	Mylar	0.047	50V	CQMA 473K 50
C415	Polystyrene	1000p	125V	CQSA 102J 125
C416	Mylar	0.0018	50V	CQMA 182K 50
C417	Mylar	0.0012	50V	CQMA 122K 50
C418	Mylar	0.0018	50V	CQMA 182K 50
C421	Electrolytic	1000	50V	CEA 102P 50
C422	Electrolytic	1000	50V	CEA 102P 50
C423	Electrolytic	10	35V	CEA 100P 35
C424	Mylar	0.001	50V	CQMA 102K 50
C403	Electrolytic	470	63V	CEA 471P 63

OTHERS

Symbol	Description	Part No.
	Spacer	REE-051
	Washer	REE-044
T401	O.S.C transformer	RTD-011
	Fuse clip	RKR-017
	Fuse 1A	REK-033
	Fuse 2.5A	REK-046

16.13 SELECTOR SWITCH ASSEMBLY (RWX-121)


4
3
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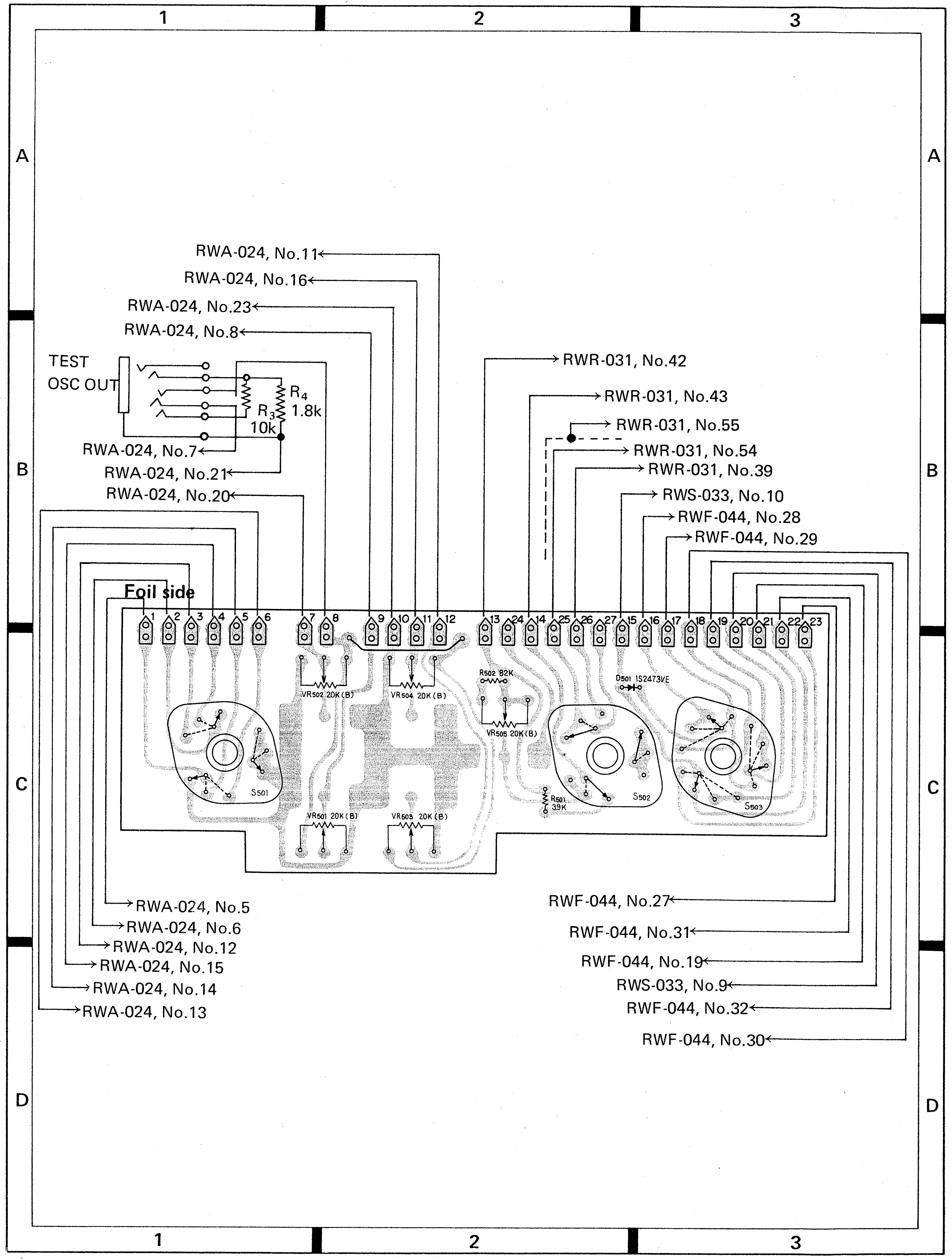
6
1
9
7
11
12
8
10
S_{501-2}
S_{501-1}
S_{501-3}
VR_{501} 20K(B)
VR_{502} 20K(B)
VR_{503} 20K(B)
VR_{504} 20K(B)
R_{502} 82K
VR_{505} 20K(B)
R_{501} 3.9K
24
27
25
26
13
14
S_{502-3}
S_{502-2}
S_{502-1}
S_{503-1}
S_{503-2}
S_{503-3}
D_{501}
1S2473VE
18
19
20
21
22
23
15
17
16
S_{501} TEST OSC SW (OFF)
S_{502} BIAS SW (FIX)
S_{503} EQ SW (NAB STD)
$VR_{501\sim504}$ TEST OSC LEVEL VR
VR_{505} BIAS VR


1
2
3
A
B
C
D
RWA-024, No.11
RWA-024, No.16
RWA-024, No.23
RWA-024, No.8
TEST
OSC OUT
R_4
1.8k
R_3
10k
RWA-024, No.7
RWA-024, No.21
RWA-024, No.20
RWR-031, No.42
RWR-031, No.43
RWR-031, No.55
RWR-031, No.54
RWR-031, No.39
RWS-033, No.10
RWF-044, No.28
RWF-044, No.29
Foil side
1
2
3
4
5
6
7
8
9
10
11
12
13
24
14
25
26
27
15
16
17
18
19
20
21
22
23
VR502 20K(B)
VR504 20K(B)
R502 82K
D501 1S2473VE
VR505 20K(B)
S501
S502
S503
R501 39K
VR501 20K(B)
VR503 20K(B)
RWA-024, No.5
RWA-024, No.6
RWA-024, No.12
RWA-024, No.15
RWA-024, No.14
RWA-024, No.13
RWF-044, No.27
RWF-044, No.31
RWF-044, No.19
RWS-033, No.9
RWF-044, No.32
RWF-044, No.30

Parts List of Selector Switch Assembly (RWX-121)

SEMICONDUCTORS

Symbol	Description	Part No.
D501	Diode	1S2473VE

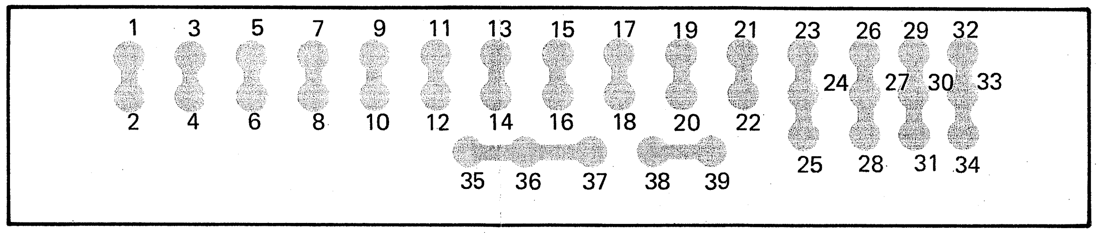
OTHERS

Symbol	Description	Part No.
S501	Selector switch (TEST O.S.C)	RSB-012
S502	Selector switch (BIAS)	RSB-012
S503	Selector switch (EQ)	RSB-014
	Sub chassis	RNA-265

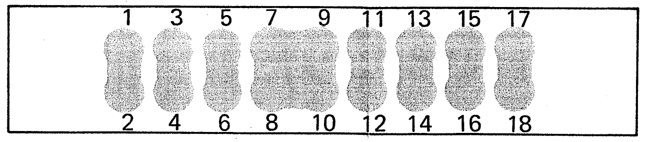
RESISTORS

Symbol	Description	Part No.
R501	Carbon film 3.9k	RD¼VS 392J
R502	Carbon film 82k	RD¼VS 823J
VR501	Variable resistor 20k-B	RCS-009
VR502	Variable resistor 20k-B	RCS-009
VR503	Variable resistor 20k-B	RCS-009
VR504	Variable resistor 20k-B	RCS-009
VR505	Variable resistor 20k-B	RCS-009

CONNECTOR ASSEMBLY A (RWX-096)

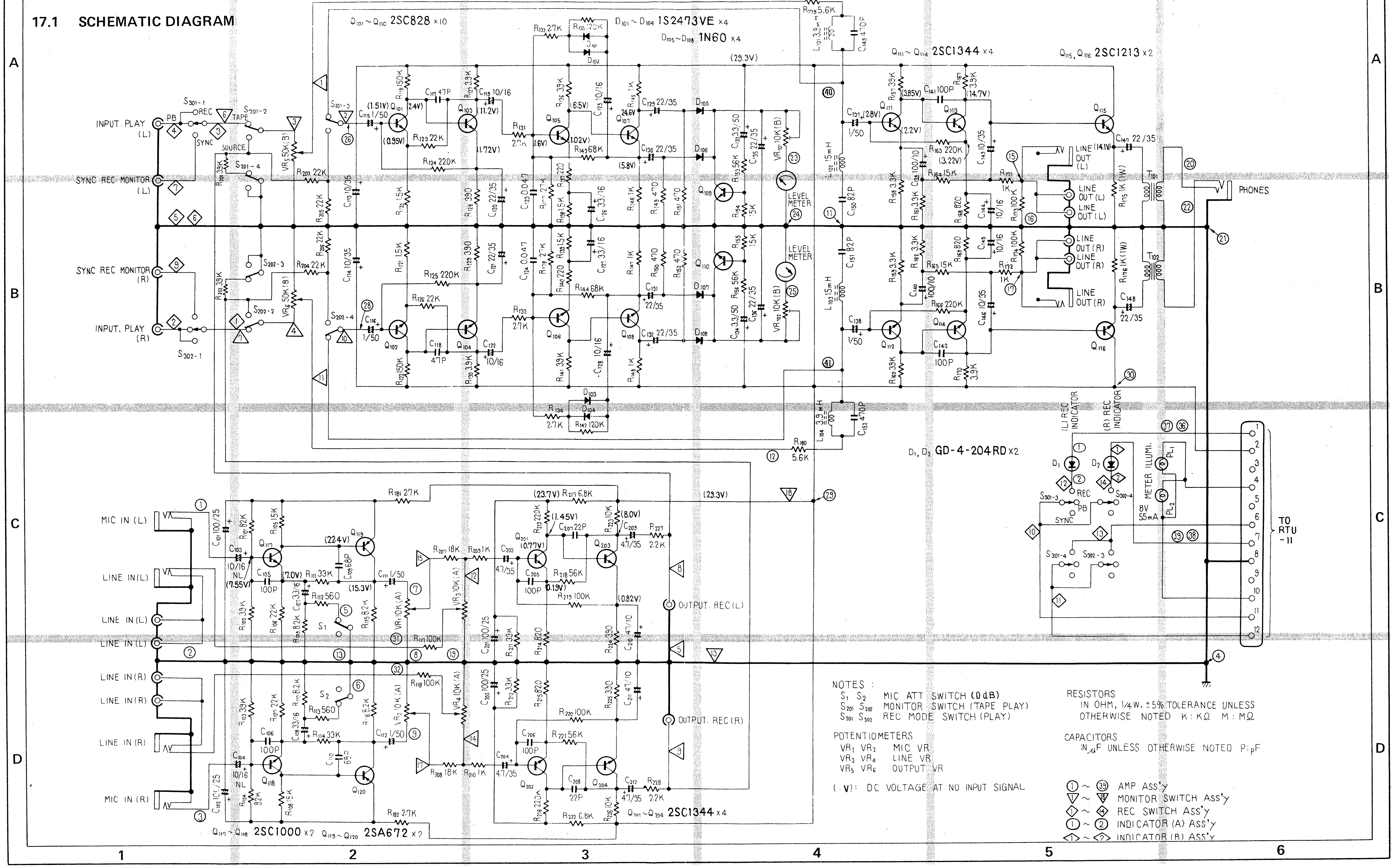

1
3
5
7
9
11
13
15
17
19
21
23
26
29
32
24
27
30
33
2
4
6
8
10
12
14
16
18
20
22
25
28
31
34
35
36
37
38
39

CONNECTOR ASSEMBLY B (RWX-097)


1
3
5
7
9
11
13
15
17
2
4
6
8
10
12
14
16
18

17. TAU-11 SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST

17.1 SCHEMATIC DIAGRAM


1
2
3
4
5
6
A
B
C
D
Q101 ~ Q110 2SC828 ×10
D101 ~ D104 1S2473VE ×4
D105 ~ D108 1N60 ×4
Q111 ~ Q114 2SC1344 ×4
Q115, Q116 2SC1213 ×2
Q117 ~ Q118 2SC1000 ×2
Q119 ~ Q120 2SA672 ×2
Q201 ~ Q204 2SC1344 ×4
D1, D2 GD-4-204RD ×2
INPUT PLAY (L)
INPUT PLAY (R)
SYNC REC MONITOR (L)
SYNC REC MONITOR (R)
PB
REC
TAPE
SYNC
SOURCE
S301-1
S201-2
S201-3
S201-4
S202-2
S202-3
S202-4
S302-1
VR5 50K(B)
VR6 50K(B)
(29.3V)
(23.3V)
(23.7V)
LEVEL METER
LINE OUT (L)
LINE OUT (R)
PHONES
T101
T102
(L) REC INDICATOR
(R) REC INDICATOR
METER ILLUMI.
8V 55mA
PL1
PL2
TO RTU-11
MIC IN (L)
MIC IN (R)
LINE IN (L)
LINE IN (R)
S1
S2
VR1 10K(A)
VR2 10K(A)
VR3 10K(A)
VR4 10K(A)
OUTPUT REC (L)
OUTPUT REC (R)
1
2
3
4
5
6

NOTES :
- S_1 S_2 MIC ATT SWITCH (0dB)
- S_{201} S_{202} MONITOR SWITCH (TAPE PLAY)
- S_{301} S_{302} REC MODE SWITCH (PLAY)

POTENTIOMETERS
- VR_1 VR_2 MIC VR
- VR_3 VR_4 LINE VR
- VR_5 VR_6 OUTPUT VR

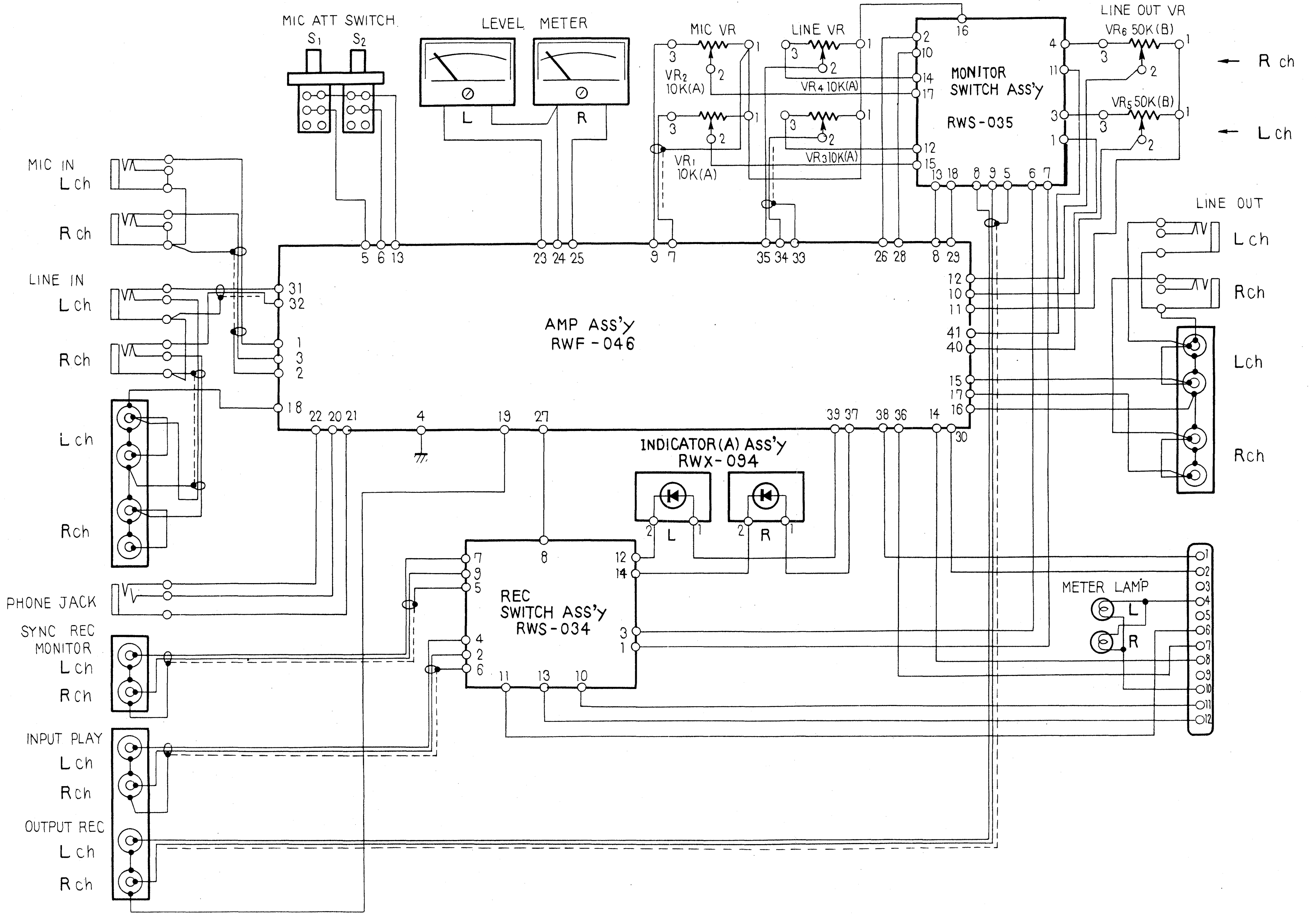
(V): DC VOLTAGE AT NO INPUT SIGNAL

RESISTORS
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED K: KΩ M: MΩ

CAPACITORS
IN μF UNLESS OTHERWISE NOTED P: pF

① ~ ㊴ AMP ASS'Y
▽1 ~ ▽18 MONITOR SWITCH ASS'Y
◇1 ~ ◇14 REC SWITCH ASS'Y
① ~ ② INDICATOR (A) ASS'Y
◁1▷ ~ ◁2▷ INDICATOR (B) ASS'Y

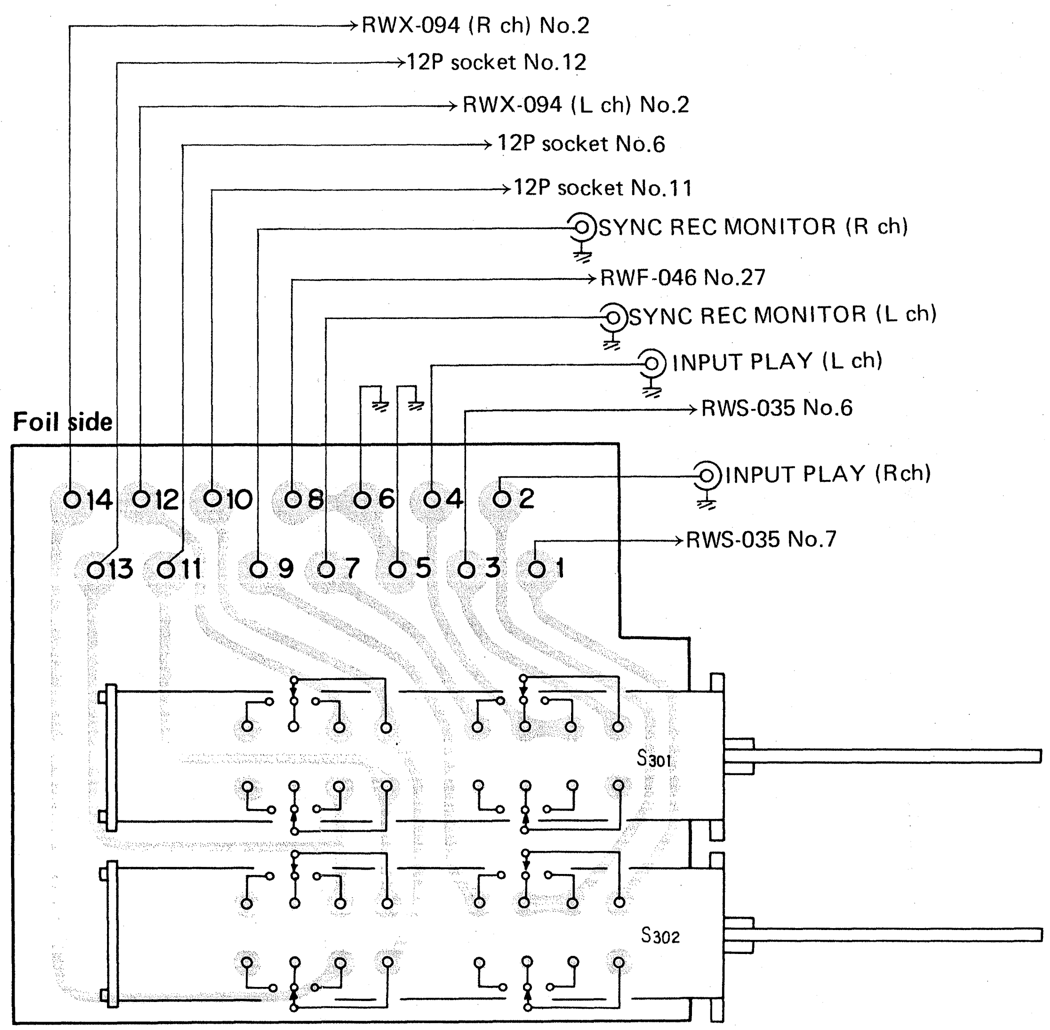
17.2 CONNECTION DIAGRAM


MIC ATT SWITCH
S1
S2
LEVEL METER
L
R
MIC VR
VR2 10K(A)
VR1 10K(A)
LINE VR
VR4 10K(A)
VR3 10K(A)
MONITOR SWITCH ASS'Y
RWS-035
LINE OUT VR
VR6 50K(B)
VR5 50K(B)
R ch
L ch
MIC IN
L ch
R ch
LINE IN
L ch
R ch
L ch
R ch
AMP ASS'Y
RWF-046
LINE OUT
L ch
R ch
L ch
R ch
INDICATOR(A) ASS'Y
RWX-094
L
R
PHONE JACK
SYNC REC MONITOR
L ch
R ch
REC SWITCH ASS'Y
RWS-034
METER LAMP
L
R
INPUT PLAY
L ch
R ch
OUTPUT REC
L ch
R ch

17.3 MISCELLANEOUS PARTS

Symbol	Description	Part No.
VR1	Variable resistor 10k-A (MIC VR)	RCV-024
VR2	Variable resistor 10k-A (MIC VR)	RCV-024
VR3	Variable reisstor 10k-A (LINE VR)	RCV-024
VR4	Variable resistor 10k-A (LINE VR)	RCV-024
VR5	Variable resistor 50k-B (LINE OUT)	RCV-023
VR6	Variable resistor 50k-B (LINE OUT)	RCV-023
S1	Push switch (MIC ATT)	RSG-033
S2	Push switch (MIC ATT)	RSG-033
	Level meter	RAW-035
	REC switch assembly	RWS-034
	Amplifier assembly	RWF-046
	Monitor switch assembly	RWS-035
	Indicator assembly	RWX-094

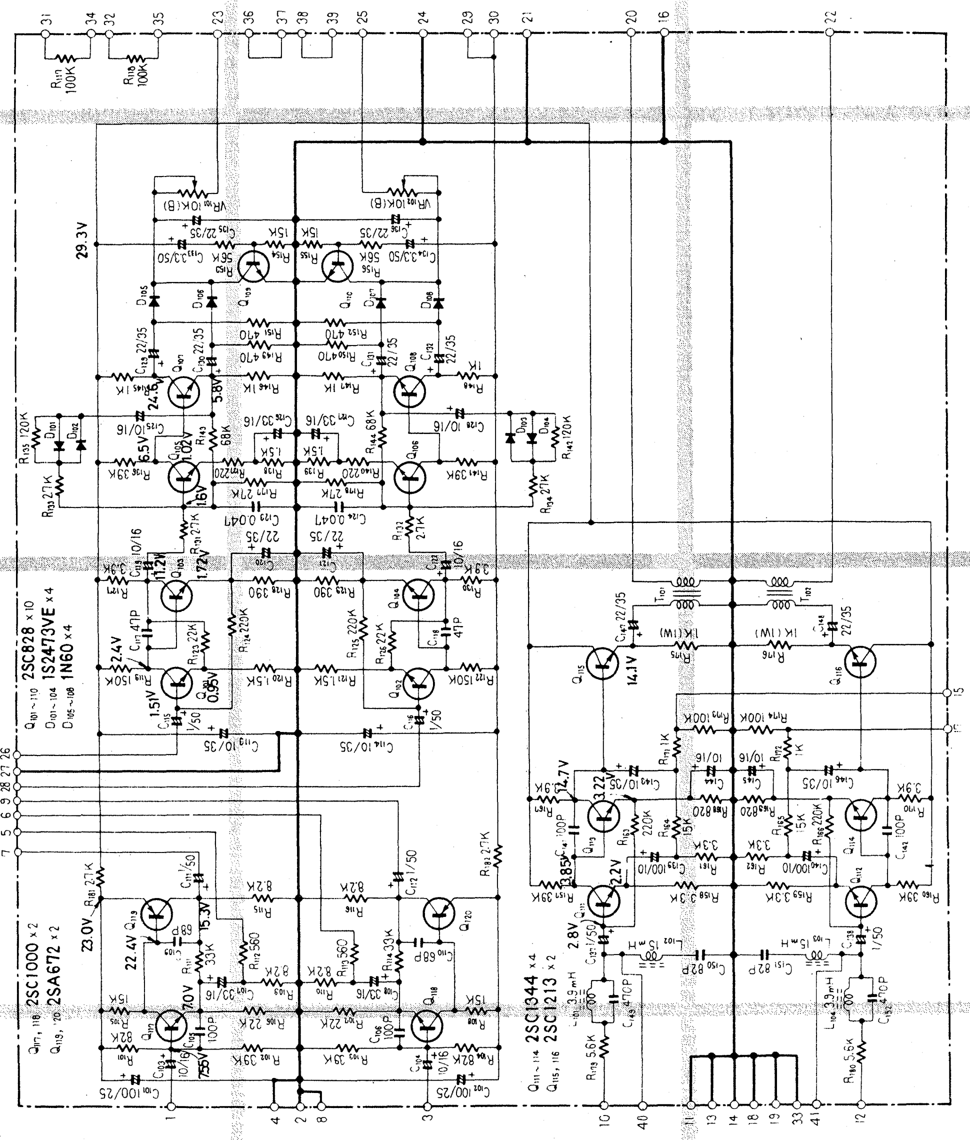
17.4 REC SWITCH ASSEMBLY (RWS-034)

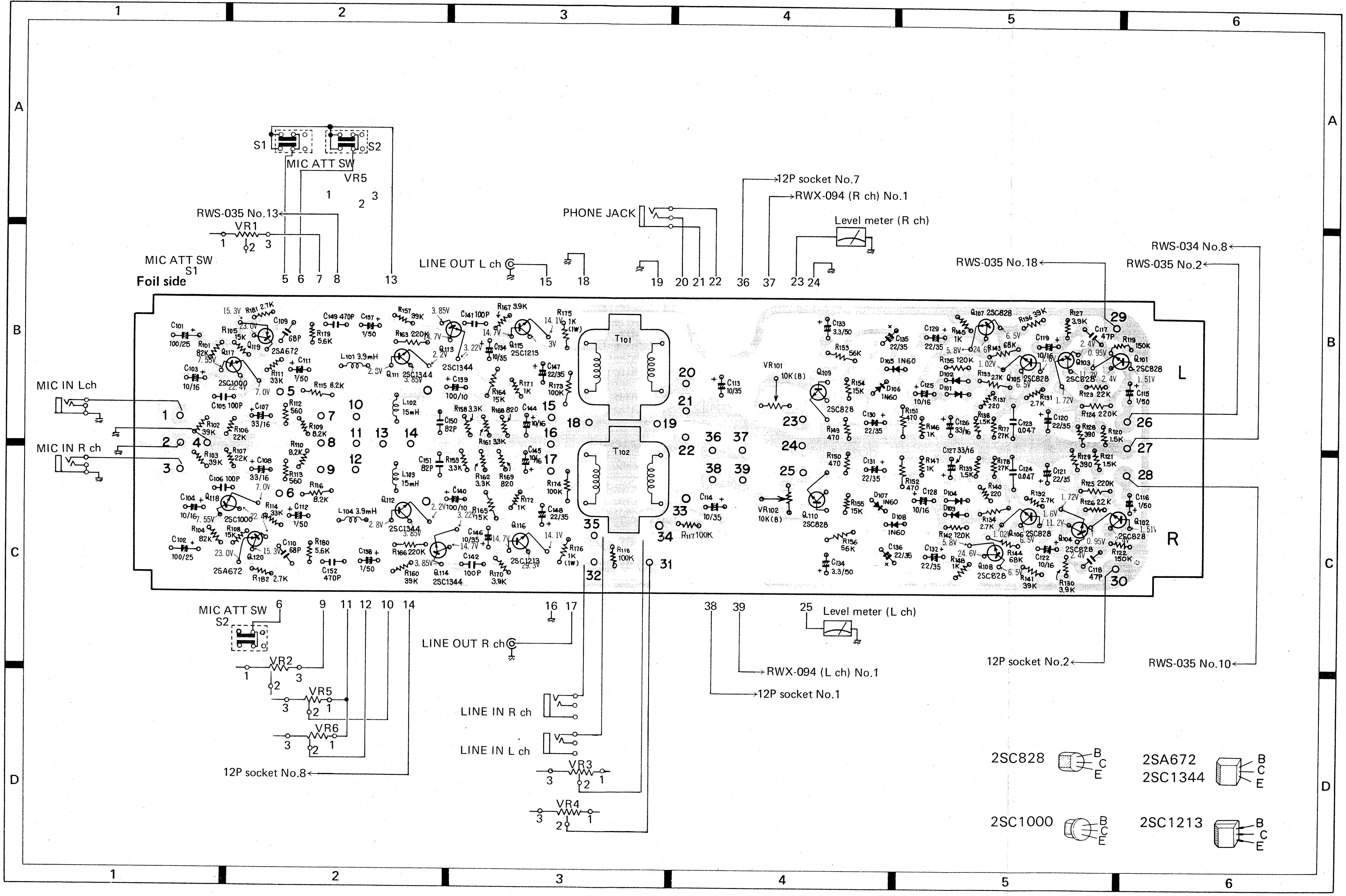

RWX-094 (R ch) No.2
12P socket No.12
RWX-094 (L ch) No.2
12P socket No.6
12P socket No.11
SYNC REC MONITOR (R ch)
RWF-046 No.27
SYNC REC MONITOR (L ch)
INPUT PLAY (L ch)
RWS-035 No.6
Foil side
INPUT PLAY (Rch)
RWS-035 No.7
14
12
10
8
6
4
2
13
11
9
7
5
3
1
S301
S302

Parts List of REC Switch Assembly (RWS-034)

Symbol	Description	Part No.
	Switch (REC, MODE)	RSK-029

17.5 AMPLIFIER ASSEMBLY (RWF-046)


1
2
3
A
B
C
D
29.3V
2SC828 ×10
1S2473VE ×4
1N60 ×4
2SC1000 ×2
2SA672 ×2
2SC1344 ×4
2SC1213 ×2
14.1V
23.0V
22.4V
12.7V
2.2V
2.8V


Foil side
MIC ATT SW
S1
S2
VR1
VR2
VR3
VR4
VR5
VR6
RWS-035 No.13
PHONE JACK
LINE OUT L ch
LINE OUT R ch
LINE IN R ch
LINE IN L ch
MIC IN Lch
MIC IN R ch
12P socket No.7
RWX-094 (R ch) No.1
Level meter (R ch)
Level meter (L ch)
RWS-035 No.18
RWS-034 No.8
RWS-035 No.2
RWS-035 No.10
12P socket No.2
RWX-094 (L ch) No.1
12P socket No.1
12P socket No.8
T101
T102
VR101 10K(B)
VR102 10K(B)
L
R
2SC828
2SA672
2SC1344
2SC1000
2SC1213
B
C
E

Parts List of Amplifier Assembly (RWF-046)

SEMICONDUCTORS

Symbol	Description	Part No.
Q101	Transistor	2SC828-R
Q102	Transistor	2SC828-R
Q103	Transistor	2SC828-R
Q104	Transistor	2SC828-R
Q105	Transistor	2SC828-R
Q106	Transistor	2SC828-R
Q107	Transistor	2SC828-R
Q108	Transistor	2SC828-R
Q109	Transistor	2SC828-R
Q110	Transistor	2SC828-R
Q111	Transistor	2SC1344-D
Q112	Transistor	2SC1344-D
Q113	Transistor	2SC1344-D
Q114	Transistor	2SC1344-D
Q115	Transistor	2SC1213-B
Q116	Transistor	2SC1213-B
Q117	Transistor	2SC1000-GR
Q118	Transistor	2SC1000-GR
Q119	Transistor	2SA672-B
Q120	Transistor	2SA672-B
D101	Diode	1S2473VE
D102	Diode	1S2473VE
D103	Diode	1S2473VE
D104	Diode	1S2473VE
D105	Diode	1N60
D106	Diode	1N60
D107	Diode	1N60
D108	Diode	1N60

RESISTOR

Symbol	Description			Part No.
VR101	Semi-fixed	10k-B		C92-049
VR102	Semi-fixed	10k-B		C92-049
R101	Carbon film	82k		RD¼VS 823J
R102	Carbon film	39k		RD¼VS 393J
R103	Carbon film	39k		RD¼VS 393J
R104	Carbon film	82k		RD¼VS 823J
R105	Carbon film	15k		RD¼VS 153J
R106	Carbon film	22k		RD¼VS 223J
R107	Carbon film	22k		RD¼VS 223J
R108	Carbon film	15k		RD¼VS 153J
R109	Carbon film	8.2k		RD¼VS 822J
R110	Carbon film	8.2k		RD¼VS 822J
R111	Carbon film	33k		RD¼VS 333J
R112	Carbon film	560		RD¼VS 561J
R113	Carbon film	560		RD¼VS 561J
R114	Carbon film	33k		RD¼VS 333J
R115	Carbon film	8.2k		RD¼VS 822J
R116	Carbon film	8.2k		RD¼VS 822J
R117	Carbon film	100k		RD¼VS 104J
R118	Carbon film	100k		RD¼VS 104J
R119	Carbon film	150k		RD¼VS 154J
R120	Carbon film	1.5k		RD¼VS 152J
R121	Carbon film	1.5k		RD¼VS 152J
R122	Carbon film	150k		RD¼VS 154J
R123	Carbon film	22k		RD¼VS 223J
R124	Carbon film	220k		RD¼VS 224J
R125	Carbon film	220k		RD¼VS 224J
R126	Carbon film	22k		RD¼VS 223J
R127	Carbon film	3.9k		RD¼VS 392J
R128	Carbon film	390		RD¼VS 391J
R129	Carbon film	390		RD¼VS 391J
R130	Carbon film	3.9k		RD¼VS 392J
R131	Carbon film	2.7k		RD¼VS 272J
R132	Carbon film	2.7k		RD¼VS 272J
R133	Carbon film	2.7k		RD¼VS 272J
R134	Carbon film	2.7k		RD¼VS 272J
R135	Carbon film	120k		RD¼VS 124J
R136	Carbon film	39k		RD¼VS 393J
R137	Carbon film	220		RD¼VS 221J
R138	Carbon film	1.5k		RD¼VS 152J
R139	Carbon film	1.5k		RD¼VS 152J
R140	Carbon film	220		RD¼VS 221J
R141	Carbon film	39k		RD¼VS 393J
R142	Carbon film	120k		RD¼VS 124J
R143	Carbon film	68k		RD¼VS 683J
R144	Carbon film	68k		RD¼VS 683J
R145	Carbon film	1.0k		RD¼VS 102J
R146	Carbon film	1.0k		RD¼VS 102J
R147	Carbon film	1.0k		RD¼VS 102J
R148	Carbon film	1.0k		RD¼VS 102J
R149	Carbon film	470		RD¼VS 471J
R150	Carbon film	470		RD¼VS 471J
R151	Carbon film	470		RD¼VS 471J
R152	Carbon film	470		RD¼VS 471J
R153	Carbon film	56k		RD¼VS 563J
R154	Carbon film	15k		RD¼VS 153J
R155	Carbon film	15k		RD¼VS 153J
R156	Carbon film	56k		RD¼VS 563J
R157	Carbon film	39k		RD¼VS 393J
R158	Carbon film	3.3k		RD¼VS 332J
R159	Carbon film	3.3k		RD¼VS 332J
R160	Carbon film	39k		RD¼VS 393J
R161	Carbon film	3.3k		RD¼VS 332J
R162	Carbon film	3.3k		RD¼VS 332J
R163	Carbon film	220k		RD¼VS 224J
R164	Carbon film	15k		RD¼VS 153J
R165	Carbon film	15k		RD¼VS 153J
R166	Carbon film	220k		RD¼VS 224J
R167	Carbon film	3.9k		RD¼VS 392J
R168	Carbon film	820		RD¼VS 821J
R169	Carbon film	820		RD¼VS 821J
R170	Carbon film	3.9k		RD¼VS 392J
R171	Carbon film	1.0k		RD¼VS 102J
R172	Carbon film	1.0k		RD¼VS 102J
R173	Carbon film	100k		RD¼VS 104J
R174	Carbon film	100k		RD¼VS 104J
R175	Metal oxide	1k	1W	RS1P 102J
R176	Metal oxide	1k	1W	RS1P 102J
R177	Carbon film	27k		RD¼VS 273J
R178	Carbon film	27k		RD¼VS 273J
R179	Carbon film	5.6k		RD¼VS 562J
R180	Carbon film	5.6k		RD¼VS 562J
R181	Carbon film	2.7k		RD¼VS 272J
R182	Carbon film	2.7k		RD¼VS 272J

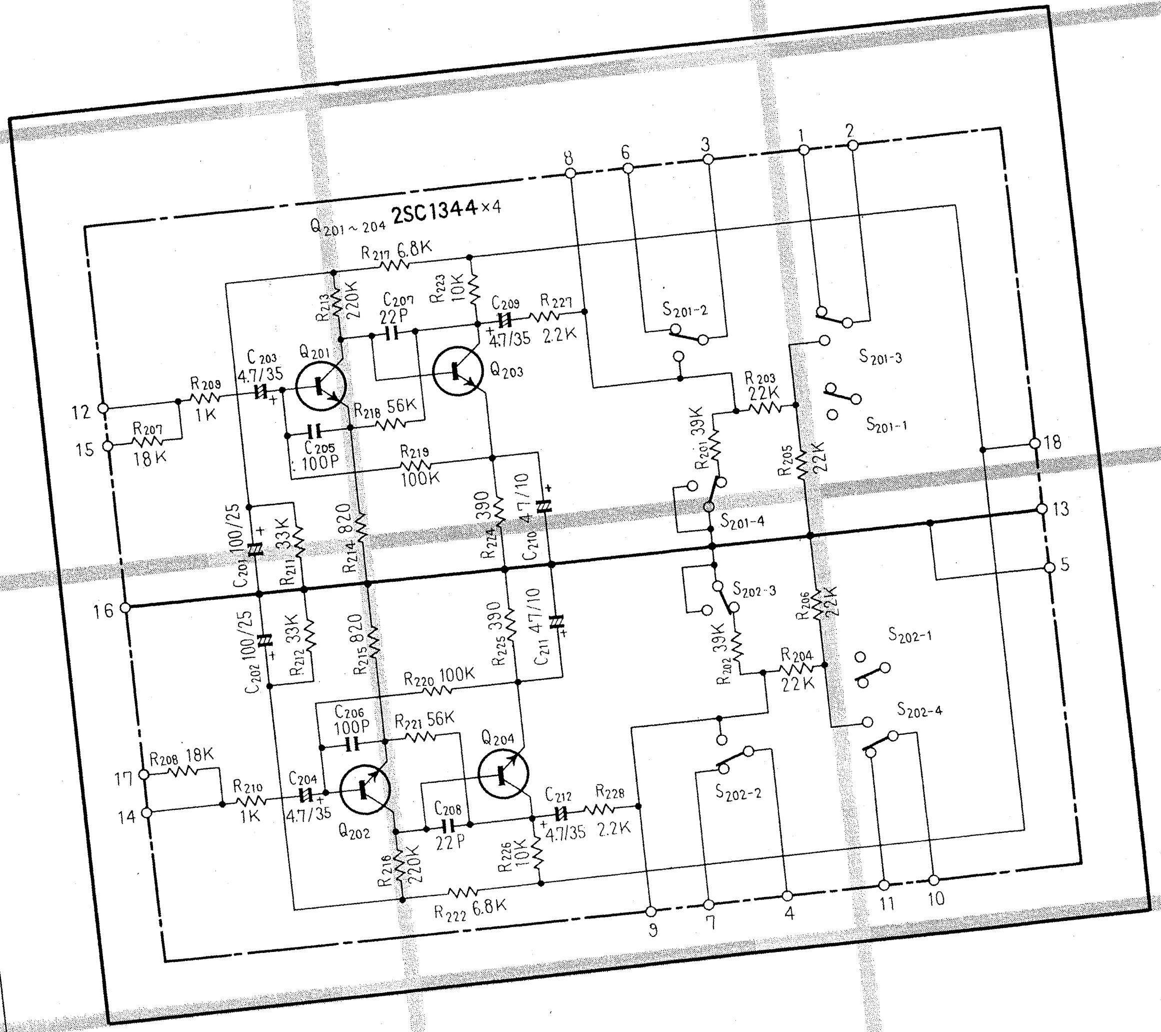
CAPACITOR

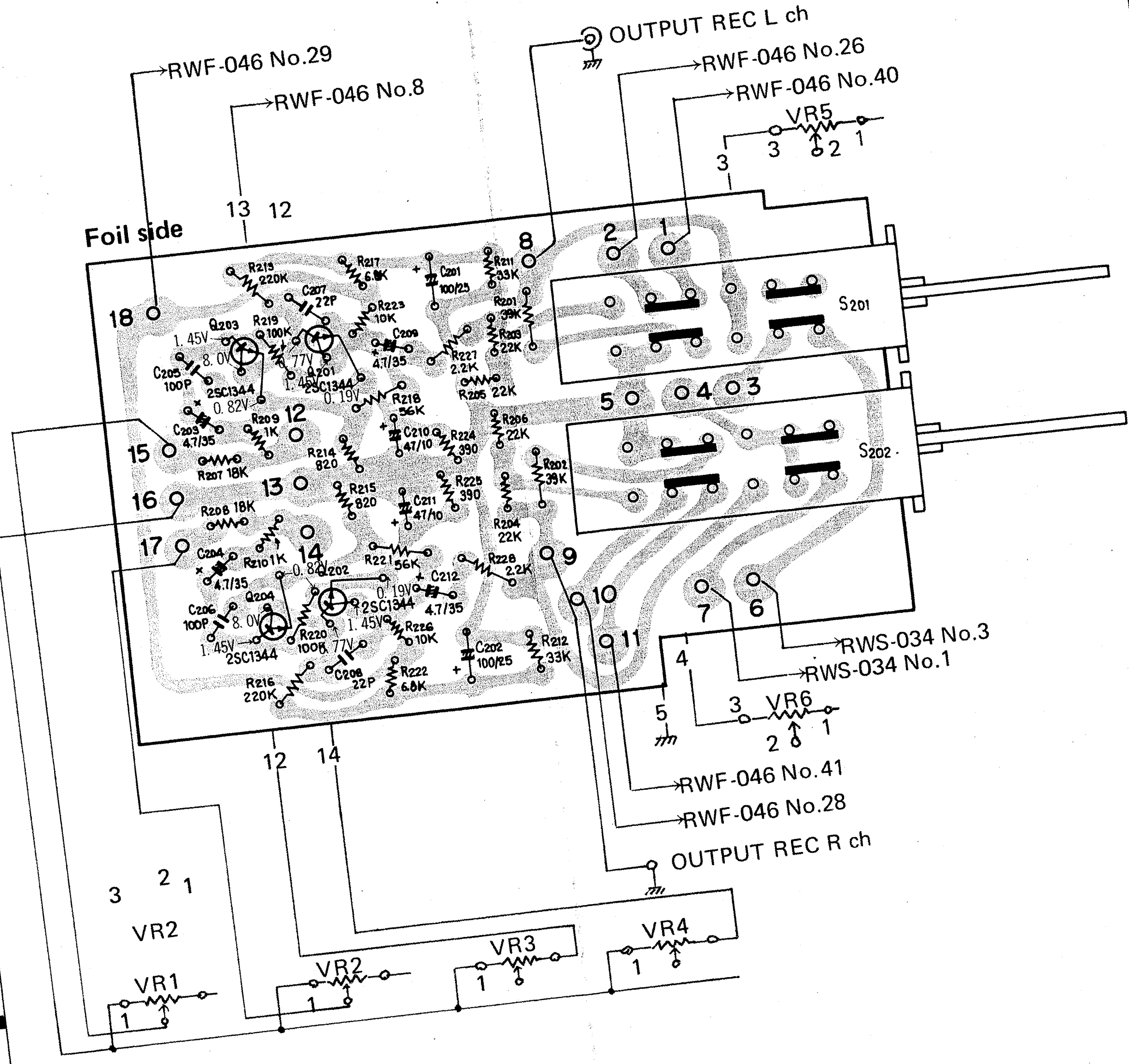
Symbol	Description			Part No.
C101	Electrolytic	100	25V	CEA 101P 25
C102	Electrolytic	100	25V	CEA 101P 25
C103	Electrolytic	10	16V	RCH-018
C104	Electrolytic	10	16V	RCH-018
C105	Polystyrene	100p	50V	RCE-003
C106	Polystyrene	100p	50V	RCE-003
C107	Electrolytic	33	16V	CEA 330P 16
C108	Electrolytic	33	16V	CEA 330P 16
C109	Polystyrene	68p	50V	RCE-023
C110	Polystyrene	68p	50V	RCE-023
C111	Electrolytic	1	50V	CEA 010P 50
C112	Electrolytic	1	50V	CEA 010P 50
C113	Electrolytic	10	35V	CEA 100P 35
C114	Electrolytic	10	35V	CEA 100P 35
C115	Electrolytic	1	50V	CEA 010P 50
C116	Electrolytic	1	50V	CEA 010P 50
C117	Polystyrene	47p	50V	RCE-012
C118	Polystyrene	47p	50V	RCE-012
C119	Electrolytic	10	16V	CEA 100P 16
C120	Electrolytic	22	35V	CEA 220P 35
C121	Electrolytic	22	35V	CEA 220P 35
C122	Electrolytic	10	16V	CEA 100P 16
C123	Mylar	0.047	50V	CQMA 473K 50
C124	Mylar	0.047	50V	CQMA 473K 50
C125	Electrolytic	10	16V	CEA 100P 16
C126	Electrolytic	33	16V	CEA 330P 16
C127	Electrolytic	33	16V	CEA 330P 16
C128	Electrolytic	10	16V	CEA 100P 16
C129	Electrolytic	22	35V	CEA 220P 35
C130	Electrolytic	22	35V	CEA 220P 35
C131	Electrolytic	22	35V	CEA 220P 35
C132	Electrolytic	22	35V	CEA 220P 35
C133	Electrolytic	3.3	50V	CEA 3R3P 50
C134	Electrolytic	3.3	50V	CEA 3R3P 50
C135	Electrolytic	22	35V	CEA 220P 35
C136	Electrolytic	22	35V	CEA 220P 35
C137	Electrolytic	1	50V	CEA 010P 50
C138	Electrolytic	1	50V	CEA 010P 50
C139	Electrolytic	100	10V	CEA 101P 10
C140	Electrolytic	100	10V	CEA 101P 10
C141	Polystyrene	100p	50V	RCE-003
C142	Polystyrene	100p	50V	RCE-003
C144	Electrolytic	10	16V	CEA 100P 16
C145	Electrolytic	10	16V	CEA 100P 16
C146	Electrolytic	10	35V	CEA 100P 35
C147	Electrolytic	22	35V	CEA 220P 35
C148	Electrolytic	22	35V	CEA 220P 35
C149	Polystyrene	470p	50V	RCE-014
C150	Polystyrene	82p	50V	RCE-024
C151	Polystyrene	82p	50V	RCE-024
C152	Polystyrene	470p	50V	RCE-014
C143	Electrolytic	10	35V	CEA 100P 35

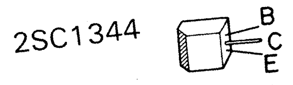
OTHERS

Symbol	Description	Part No.
T101	Matching transformer	RTV-005
T102	Matching transformer	RTV-005
L101	Trap coil	RTF-015
L102	Trap coil	RTF-016
L103	Trap coil	RTF-016
L104	Trap coil	RTF-015

17.6 MONITOR SWITCH ASSEMBLY (RWS-035)


Q201 ~ 204 2SC1344×4
R217 6.8K
R213 220K
C207 22P
R223 10K
C209 4.7/35
R227 2.2K
C203 4.7/35
Q201
Q203
R209 1K
R207 18K
R218 56K
C205 100P
R219 100K
C201 100/25
R211 33K
R214 820
R224 390
C210 47/10
R201 39K
R203 22K
R205 22K
S201-1
S201-2
S201-3
S201-4
S202-1
S202-2
S202-3
S202-4
C202 100/25
R212 33K
R215 820
R220 100K
R225 390
C211 47/10
R202 39K
R204 22K
R206 22K
R208 18K
R210 1K
C204 4.7/35
C206 100P
R221 56K
Q202
Q204
C208 22P
C212 4.7/35
R228 2.2K
R216 220K
R226 10K
R222 6.8K
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18


Foil side
OUTPUT REC L ch
RWF-046 No.29
RWF-046 No.8
RWF-046 No.26
RWF-046 No.40
VR5
S201
S202
2SC1344
1.45V
8.0V
0.82V
0.19V
7.7V
RWS-034 No.3
RWS-034 No.1
VR6
RWF-046 No.41
RWF-046 No.28
OUTPUT REC R ch
VR1
VR2
VR3
VR4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18


2SC1344
B
C
E

Parts List of Monitor Switch Assembly (RWS-035)

SEMICONDUCTORS

Symbol	Description	Part No.
Q201	Transistor	2SC1344-D
Q202	Transistor	2SC1344-D
Q203	Transistor	2SC1344-D
Q204	Transistor	2SC1344-D

RESISTORS

Symbol	Description	Part No.
R201	Carbon film 39k	RD¼VS 393J
R202	Carbon film 39k	RD¼VS 393J
R203	Carbon film 22k	RD¼VS 223J
R204	Carbon film 22k	RD¼VS 223J
R205	Carbon film 22k	RD¼VS 223J
R206	Carbon film 22k	RD¼VS 223J
R207	Carbon film 18k	RD¼VS 183J
R208	Carbon film 18k	RD¼VS 183J
R209	Carbon film 1k	RD¼VS 102J
R210	Carbon film 1k	RD¼VS 102J
R211	Carbon film 33k	RD¼VS 333J
R212	Carbon film 33k	RD¼VS 333J
R213	Carbon film 220k	RD¼VS 224J
R214	Carbon film 820	RD¼VS 821J
R215	Carbon film 820	RD¼VS 821J
R216	Carbon film 220k	RD¼VS 224J
R217	Carbon film 6.8k	RD¼VS 682J
R218	Carbon film 56k	RD¼VS 563J
R219	Carbon film 100k	RD¼VS 104J
R220	Carbon film 100k	RD¼VS 104J
R221	Carbon film 56k	RD¼VS 563J
R222	Carbon film 6.8k	RD¼VS 682J
R223	Carbon film 10k	RD¼VS 103J
R224	Carbon film 390	RD¼VS 391J
R225	Carbon film 390	RD¼VS 391J
R226	Carbon film 10k	RD¼VS 103J
R227	Carbon film 2.2k	RD¼VS 222J
R228	Carbon film 2.2k	RD¼VS 222J

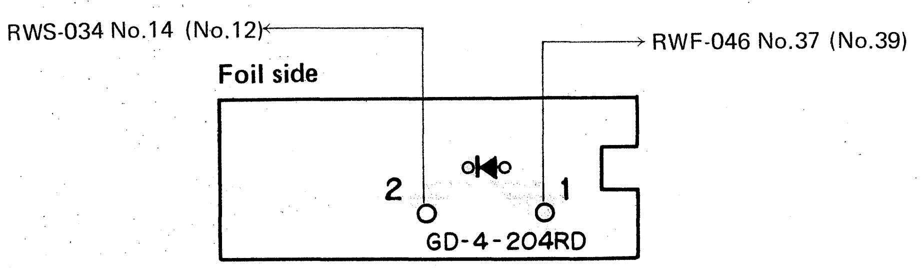
CAPACITORS

Symbol	Description	Part No.
C201	Electrolytic 100 25V	CEA 101P 25
C202	Electrolytic 100 25V	CEA 101P 25
C203	Electrolytic 4.7 35V	CEA 4R7P 35
C204	Electrolytic 4.7 35V	CEA 4R7P 35
C205	Polystyrene 100p 50V	RCE-003
C206	Polystyrene 100p 50V	RCE-003
C207	Polystyrene 22p 50V	RCE-019
C208	Polystyrene 22p 50V	RCE-019
C209	Electrolytic 4.7 35V	CEA 4R7P 35
C210	Electrolytic 47 10V	CEA 470P 10
C211	Electrolytic 47 10V	CEA 470P 10
C212	Electrolytic 4.7 35V	CEA 4R7P 35

OTHERS

Symbol	Description	Part No.
	Switch (MONITOR)	RSK-030

17.7 INDICATOR (A) ASSEMBLY (RWX-094)



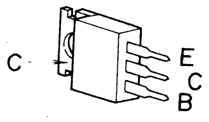
Parts List of Indicator (A) Assembly (RWX-094)

Symbol	Description	Part No.
	Light emitting diode	GD-4-204RD

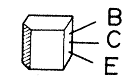
18. JT-211 SCHEMATIC DIAGRAMS, P.C. BOARD PATTERNS AND PARTS LIST

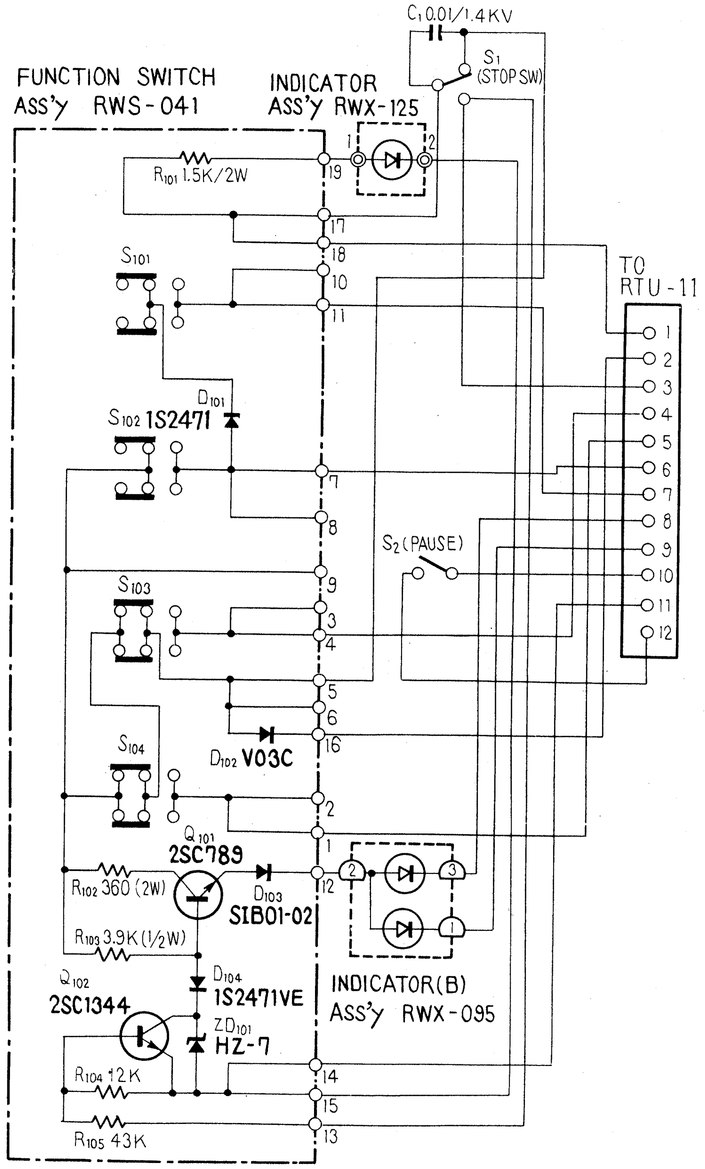
18.1 SCHEMATIC DIAGRAM

2SC789



2SC1344




C1 0.01/1.4KV
S1 (STOP SW)
FUNCTION SWITCH ASS'y RWS-041
INDICATOR ASS'y RWX-125
1
2
R101 1.5K/2W
19
17
18
10
11
S101
TO RTU-11
1
2
3
4
5
6
7
8
9
10
11
12
D101
S102 1S2471
7
8
S2 (PAUSE)
9
S103
3
4
5
6
D102 V03C
16
S104
2
1
Q101
2SC789
D103
SIB01-02
12
R102 360 (2W)
R103 3.9K (1/2W)
Q102
2SC1344
D104
1S2471VE
ZD101
HZ-7
INDICATOR(B) ASS'y RWX-095
R104 12K
R105 43K
14
15
13

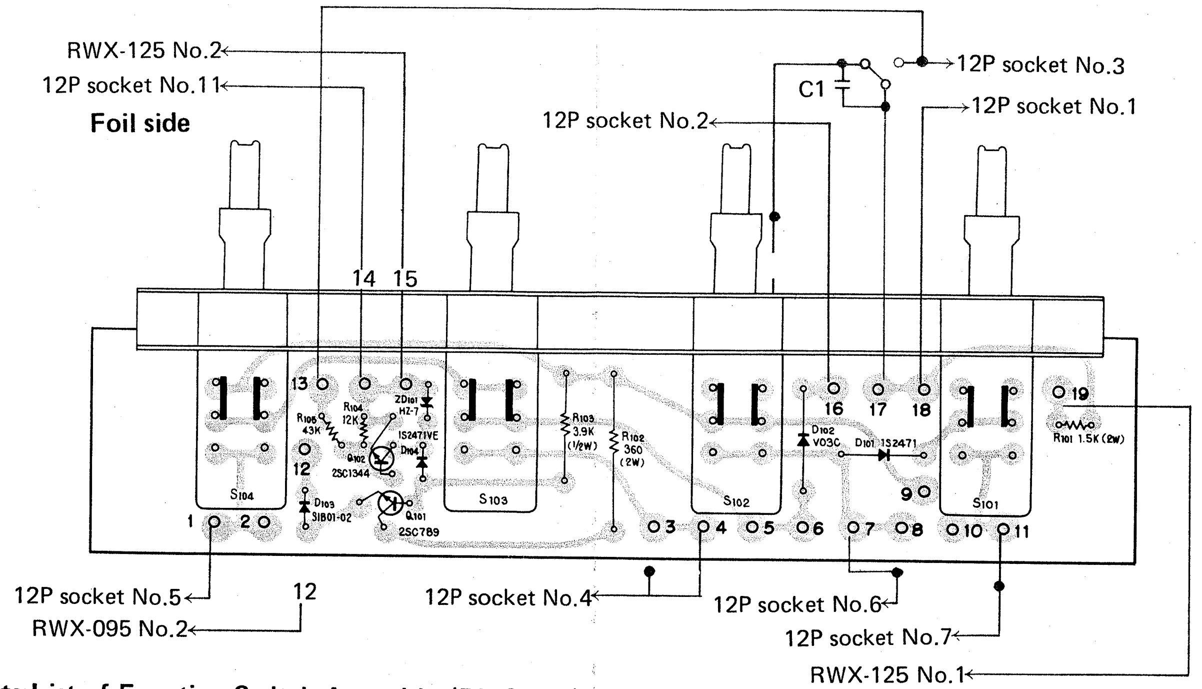
○ FUNCTION SWITCH Ass'y
◠ INDICATOR (B) ASS'y
◎ INDICATOR ASS'y

S101 --- REC SWITCH (OFF)
S102 --- PLAY SWITCH (OFF)
S103 --- F.F SWITCH (OFF)
S104 --- REW SWITCH (OFF)
S1 --- STOP SWITCH (OFF)
S2 --- PAUSE SWITCH (OFF)

18.2 MISCELLANEOUS PARTS

Symbol	Description	Part No.
	Function switch assembly	RWS-041
	Indicator assembly	RWX-125
	Indicator B assembly	RWX-095
	Wire crip	RNE-941
	Capacitor cover (A) C1	REC-150
	C1 Ceramic 0.01 1.4kV	C43-003
	S1 Microswitch (STOP)	RSF-018
	S2 Microswitch (PAUSE)	RSF-018

18.3 FUNCTION SWITCH ASSEMBLY (RWS-041)


RWX-125 No.2
12P socket No.11
Foil side
12P socket No.2
C1
12P socket No.3
12P socket No.1
14 15
13
16 17 18
19
R101 1.5K (2W)
R104 12K
R105 43K
ZD101 HZ-7
1S2471VE
D104
Q102 2SC1344
12
R103 3.9K (1/2W)
R102 360 (2W)
D102 V03C
D101 1S2471
D103 SIB01-02
Q101 2SC789
S104
S103
S102
S101
1
2
3
4
5
6
7
8
9
10
11
12P socket No.5
12
RWX-095 No.2
12P socket No.4
12P socket No.6
12P socket No.7
RWX-125 No.1

Parts List of Function Switch Assembly (RWS-041)

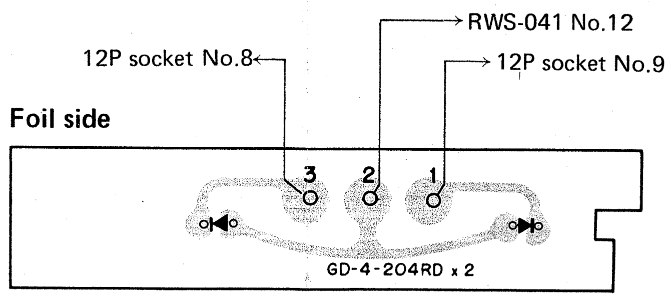
SEMICONDUCTORS

Symbol	Description	Part No.
D101	Diode	1S2471
D102	Diode	V03C
D103	Diode	SIB01-02
D104	Diode	1S2471VE
ZD101	Zener diode	HZ7-B
Q101	Transistor	2SC789-0
Q102	Transistor	2SC1344-D

RESISTORS

Symbol	Description			Part No.
R101	Metal oxide	1.5k	2W	RS2P 152J
R102	Metal oxide	360	2W	RS2P 361J
R103	Carbon film	3.9k	½W	RD½PS 392J
R104	Carbon film	12k		RD¼VS 123J
R105	Carbon film	43k		RD¼VS 433J

18.4 INDICATOR (B) ASSEMBLY (RWX-095)


RWS-041 No.12
12P socket No.8
12P socket No.9
Foil side
3
2
1
GD-4-204RD x 2

Parts List of Indicator (B) Assembly (RWX-095)

Symbol	Description	Part No.
	Light emitting diode	GD-4-204RD
	Light emitting diode	GD-4-204GD

19. MECHANICAL ADJUSTMENTS

- Be sure to perform adjustments in specified operating modes (horizontal or vertical).

19.1 REEL HUB HEIGHT (Fig. 6)

This adjustment is required when reel hub height is unsuitable, or after replacing supply or take-up motor. Perform with side panels removed. Steps are the same for both supply and take-up reel hubs.

1. Set tape deck for horizontal operation.
2. Check for secure mounting of mechanical panel and chassis.
3. Loosen Allen set screws and adjust for 2 mm spacing between panel and reel hub.
4. After adjusting, tighten screw firmly (to more than 10 kg.cm torque).

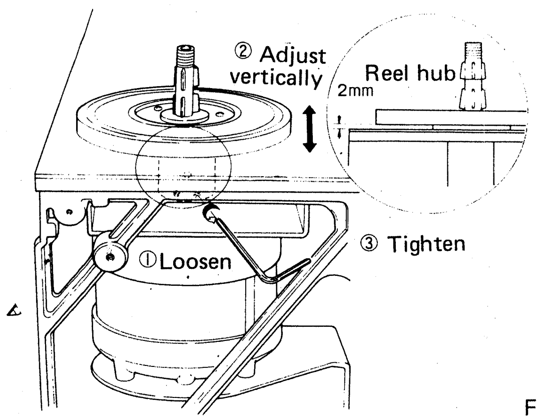


Fig. 6

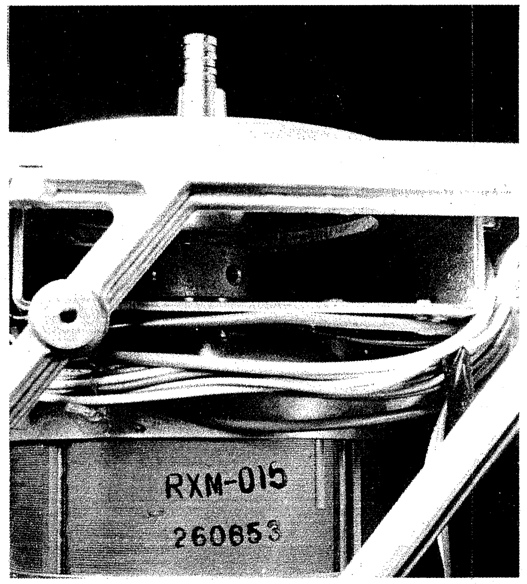


Photo 1

19.2 BRAKE

This adjustment is required when tape slackens while breaking, or when solenoids or motors are replaced. Set deck for vertical operation and check the following points before adjusting.

1. When solenoid is not pulled in (brake applied) dimension A in photo 3 is 4 mm.
2. Press solenoid shaft to release brake and confirm that motor can be turned smoothly by hand.

- **Adjustment Steps (Figs. 7 & 8)**

1. In order to standardize test conditions, operate reel hub to be tested at fast forward (or rewind) for about 2 seconds, then press the STOP button to stop rotation.
2. Install 7-in. reel wound with string in counterclockwise direction for supply hub or clockwise direction for the take-up hub for fast forward.
3. With tension gauge pull perpendicularly in direction B for supply hub or C for left hub and read value when reel hub starts turning.
4. Adjust brake spring anchor point so that tension gauge reads 300 to 450 g (torque = 900—1350 g.cm). Lower brake torque is desirable, provided that the following Post Adjustment Checks are satisfied.
5. If specified value is not obtained by changing spring anchor point in adjusting hole, check the following points.

- Brake drum contamination
- Brake felt contamination
- Brake guide out of position
- Brake drum operation not smooth

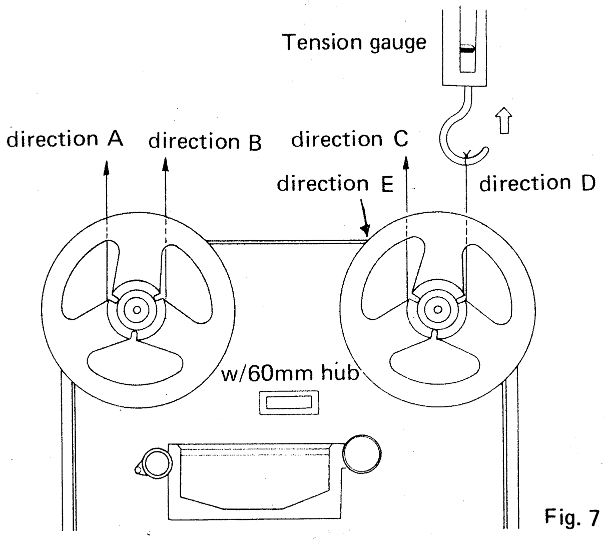


Fig. 7

6. Confirm that values obtained when tension gauge is pulled in direction D (A) and direction B (C) have the following relationship.

$$\frac{\text{B (C) Direction}}{\text{D (A) Direction}} = 2.3 \text{ to } 3.7$$

- **Post Adjustment Checks**

1. Install 10-in. tape reel on the supply reel hub.
2. Operate fast forward (or rewind) and when tape diameter on take-up reel becomes 10 to 40 mm larger than that on the supply reel, press the PLAY button. Confirm that tape comes to a full stop before playback begins.
3. If this is not fulfilled, readjust.

NOTE:
Step 2 condition may not be obtained if capacitance of C809 and C812 is insufficient.

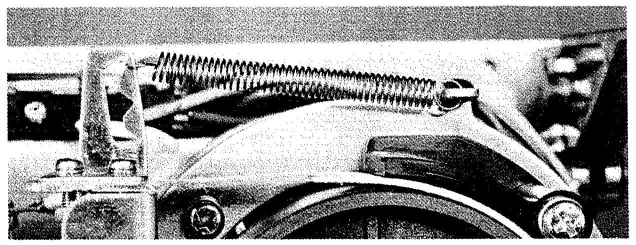


Photo 2

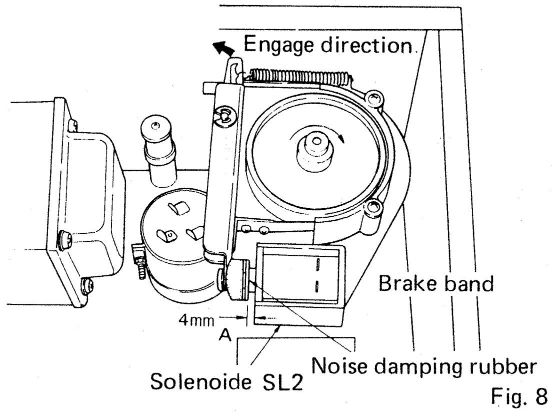


Fig. 8

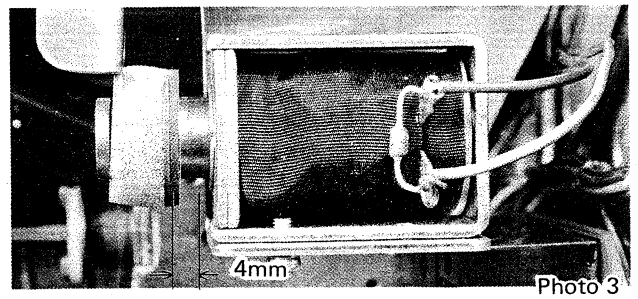


Photo 3

19.3 TAKE-UP TORQUE AND BACK TENSION

- **Back Tension Torque During Playback**

1. Set tension selector switch to 10-in. reel position (switch not depressed).
2. With tape deck vertical, perform 19 cm/s playback and measure back tension of supply reel hub (pull in direction B of Fig. 7).

NOTE:
Shut off switch must be vertical in order to activate playback.

3. So that this value becomes 93 — 110g (280 — 330 g.cm), adjust slider of R1 2.2k ohms (R1-2). Refer to Fig. 9.
4. Set tension selector switch to 7-in reel position (switch depressed) and measure back tension as in Step 2.
5. So that this value becomes 63 — 77 g (190 — 230 g.cm), adjust slider of R2 350 ohms (R2-1).
6. After adjusting resistors, tighten slider screws firmly.

- **Take-Up Torque During Playback**

1. Set tension selector switch to 10-in reel position.
2. With deck in vertical position, perform 19cm/s playback and measure take-up reel torque (transmitted during take-up in direction E of Fig. 7).
3. So that this value becomes 190 — 210 g (570 — 630 g.cm) adjust slider of R2 350 ohms (R2-2) (Fig. 9).

- **Fast Forward Back Tension Torque**

1. With deck vertical, measure supply reel back tension (direction B of Fig. 7) during fast forward.
2. So that this value becomes 35 — 45 g (105 — 135 g.cm) adjust slider of R1 2.2 k ohms (R 1-1) (Fig. 9).

NOTE:
Since rewind back tension also employs R1, it becomes automatically set when FF back tension adjustment has been completed.

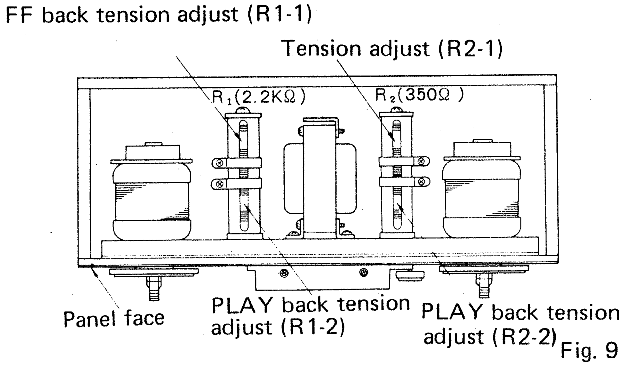

FF back tension adjust (R1-1)
Tension adjust (R2-1)
R₁(2.2KΩ)
R₂(350Ω)
Panel face
PLAY back tension adjust (R1-2)
PLAY back tension adjust (R2-2)

Fig. 9

20. HEAD ADJUSTMENTS(JT-2022T & JT-2044T)

20.1 COARSE ADJUSTMENTS

Run tape and turn adjusting screws to adjust each head as indicated in Fig. 17. 18.

Head	Adjusting Locations
Playback	1 2 3 4 5
Record	6 7 8 9 10
Erase	11 12 13 14

Screws 4—5, 9—10, 13—14 are for fine adjustments.

20.2 HEIGHT ADJUSTMENTS

Adjust each head core end and tape space to dimensions indicated in Fig. 20. Numbers in parentheses indicate JT-2044T

Head	Adjustment Locations
Playback	1 2 3
Record	6 7 8
Erase	13 14 (see note 1)

NOTE 1:
If erase head height cannot be adjusted to Fig. 19 dimensions, loosen screws 13 and 14 and employ spacer to adjust.

Spacer A:	*0.1t (Part No. RNE-863)*
Spacer B:	*0.2t (Part No. RNE-864)*
Spacer C:	*0.3t (Part No. RNE-865)*

20.3 TILT ADJUSTMENTS (RECORD & PLAY HEADS)

Adjust for parallelism between tape guide (at 90° angle with respect to head base) and head surface (Fig. 21).

Play	1 2 3
Record	6 7 8

20.4 AZIMUTH ADJUSTMENTS (RECORD & PLAY HEADS)

Adjust for 90° between tape head gap and tape (Fig. 22).

Playback	3
Record	8

20.5 HEAD FINE ADJUSTMENTS (JT-2022T & JT-2044T)

Connect VTVM to OUTPUT PLAY jacks (39k ohms load) and play test tape STD-154.

20.6 PLAYBACK HEAD

Play 15 kHz of STD-154 and adjust screw 3 for maximum output from all channels.

20.7 RECORD HEAD

- Insert 12P dummy plug into connector.
- Apply 15 kHz/−20dB signal to INPUT REC jacks and set for recording mode.
- Record on test tape STD-502 and adjust screw 8 for maximum output from all channels at OUTPUT PLAY jacks.

NOTE:
If playback level varies (at OUTPUT PLAY jacks), readjust heads left-right inclination.

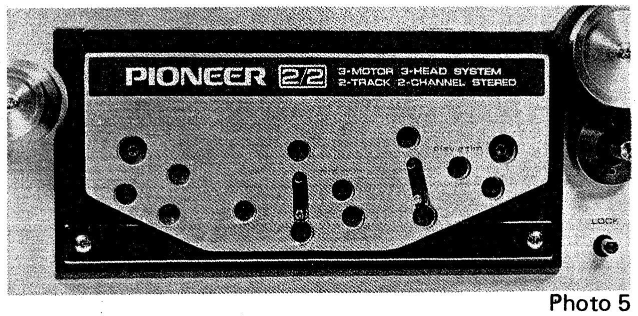

PIONEER
2/2
3-MOTOR 3-HEAD SYSTEM
2-TRACK 2-CHANNEL STEREO
LOCK

Photo 5

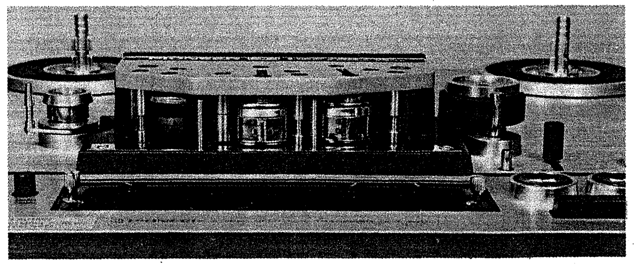


Photo 6

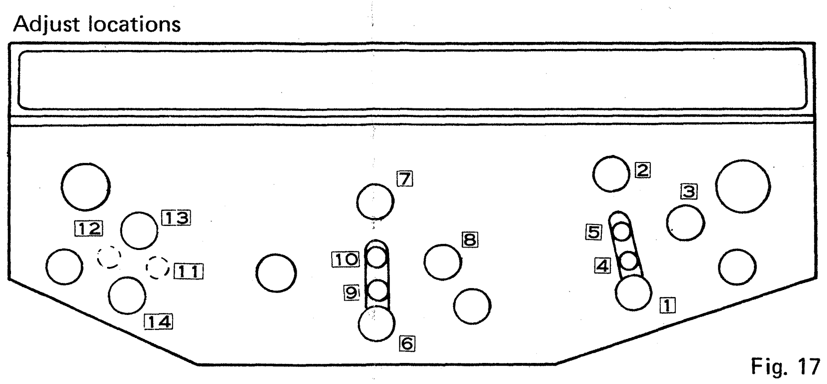

Adjust locations
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Fig. 17

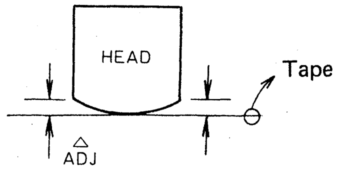

HEAD
Tape
ADJ

Fig. 18

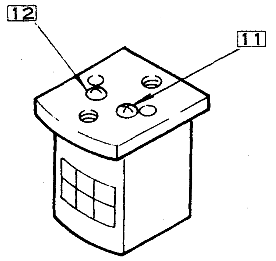


Fig. 19

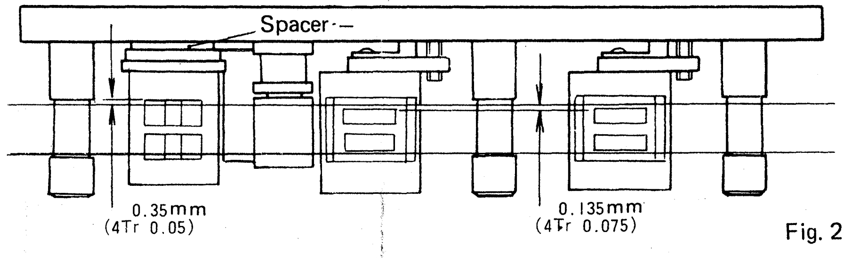

Spacer
0.35mm
(4Tr 0.05)
0.135mm
(4Tr 0.075)

Fig. 20

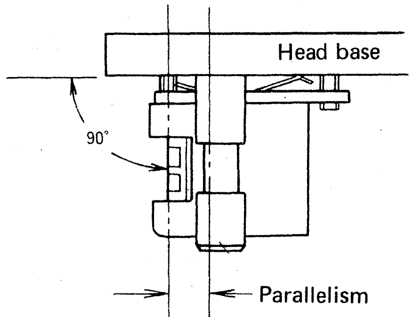

Head base
90°
Parallelism

Fig. 21

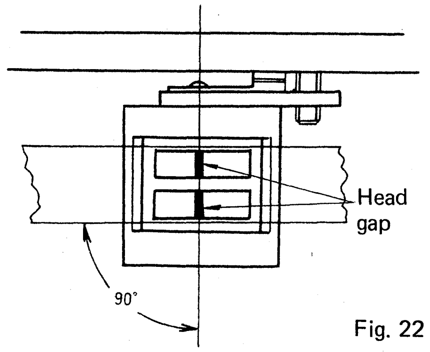


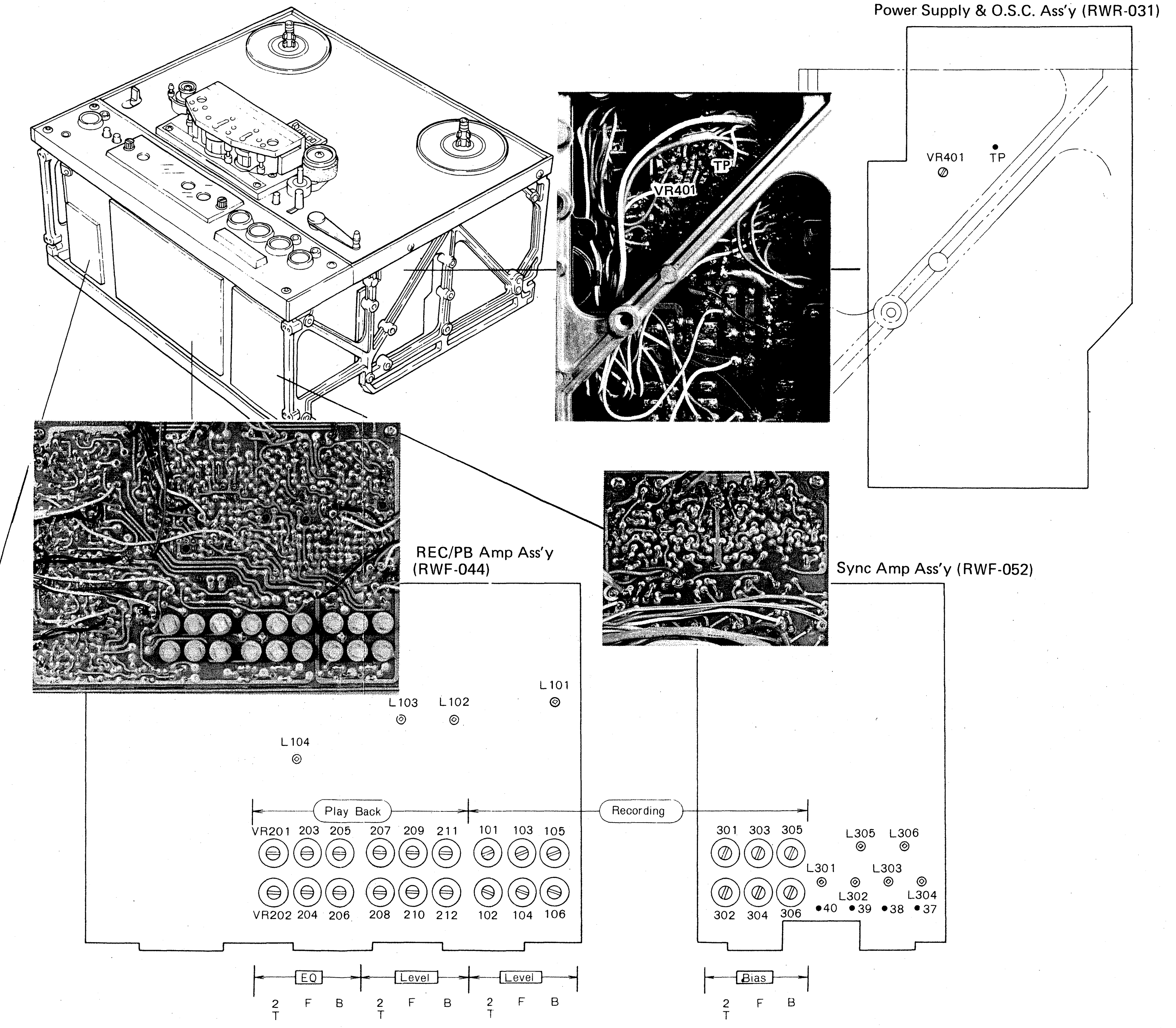
Fig. 22

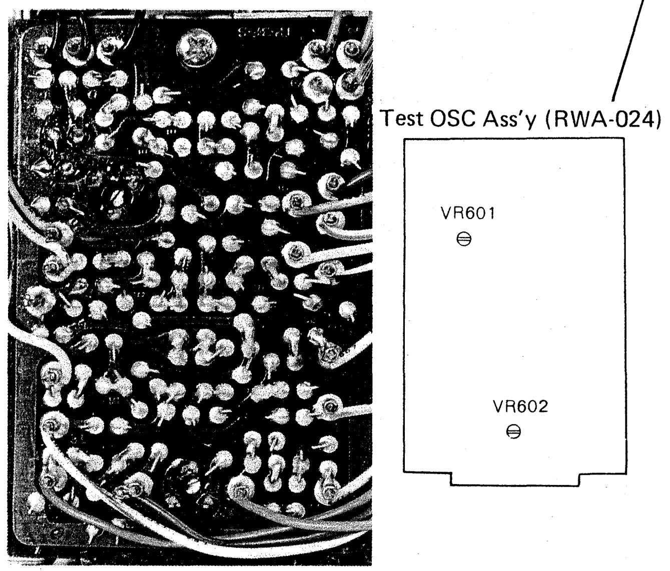
21. ELECTRICAL ADJUSTMENTS

Electrical adjustments consist of 11 steps (21.1 to 21.11) and with the exception of 22 TAU-11 Adjustments, all pertain to RTU-11.

Adjustment Conditions of RTU-11

1. EQ switch at NAB-LH position
2. Tape speed of 19 cm/s
3. Playback test tape is STD-154
4. Recording test tape is STD-502
5. OUTPUT PLAY jack load is 39 k ohms
6. Two dummy plugs are required for recording mode.
7. Refer to Disassembly on page 18 and remove back cover and side panels.


Power Supply & O.S.C. Ass'y (RWR-031)
TP
VR401
VR401
TP
REC/PB Amp Ass'y (RWF-044)
Sync Amp Ass'y (RWF-052)
L101
L103
L102
L104
Play Back
Recording
VR201 203 205 207 209 211
101 103 105
VR202 204 206 208 210 212
102 104 106
301 303 305
302 304 306
L305 L306
L301 L303
L302 L304
•40 •39 •38 •37
EQ
Level
Level
Bias
2T F B
2T F B
2T F B
2T F B


Test OSC Ass'y (RWA-024)
VR601
VR602

21.1 PLAYBACK LEVEL (Fig. 23)

Play 700 Hz/0dB of test tape STD-154 and adjust for −20 dBv (100 mV) output on each channel at OUTPUT PLAY jacks (39 k ohms load).

Channel \ Head unit			JT-2022T	JT-2044T
FRONT	L	ch. 1	VR_{207}	VR_{209}
	R	ch. 3	VR_{208}	VR_{210}
BACK	L	ch. 2		VR_{211}
	R	ch. 4		VR_{212}

21.2 PLAYBACK EQUALIZATION (Fig. 23)

1. Play 700 Hz/0dB and 10 kHz/−10dB of test tape STD-154.
2. Adjust so that output of each channel at OUTPUT PLAY jacks (39 k ohms load) becomes as follows:
3. As this adjustment affects that of 21.1, repeat steps 21.1 and 21.2 several times to obtain correct level setting.

700Hz/0dB playback . . . . . −20 dBv (100mV) ±0.5dB
(94.4 ~ 106mV)
10kHz/−10dB playback . . . . . −30 dBv (31.6mV) ±0.5dB
(29 ~ 34mV)

Channel \ Head unit			JT-2022T	JT-2044T
FRONT	L	ch. 1	VR_{201}	VR_{203}
	R	ch. 3	VR_{202}	VR_{204}
BACK	L	ch. 2		VR_{205}
	R	ch. 4		VR_{206}

21.3 OSCILLATION STRENGTH (Fig. 24)

1. Set BIAS switch to FIX position.
2. Install JT-2044T head unit.
3. Connect VTVM between TP and ground on power supply & O.S.C ass'y (RWR-031).
4. With 4 channels simultaneously in record mode, adjust VR401 for 20V at TP on power supply & O.S.C ass'y.

21.4 ERASE HEAD DUMMY

21.4.1 Employing Frequency Counter (Fig. 25-A)

1. Connect frequency counter between TP on power supply & O.S.C ass'y (RWR-031) and ground.
2. With 4 channels simultaneously in recording mode, note oscillation frequency.
3. Adjust so that frequencies during front (ch-1 & ch-3) only recording, and back (ch-2 & ch-4) only recording are the same as the 4 channel recording mode. Adjustment points are given below.
   L305: Oscillation frequency during back only recording adjustment point.
   L306: Oscillation frequency during front only recording adjustment point.

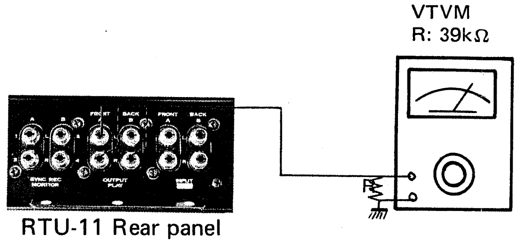


Fig. 23

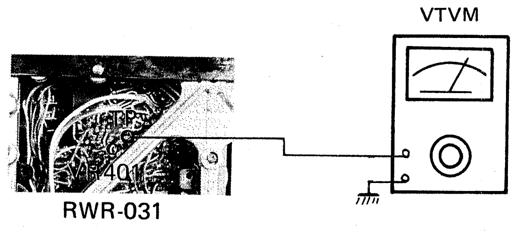


Fig. 24

21.4.2 Without Frequency Counter (Fig. 25-B)

Employ dual trace oscilloscope.

1. Connect ch-1 of oscilloscope between TP on power supply & O.S.C ass'y (RWR-031) and ground.
2. Connect signal from external oscillator (such as signal generator) to ch-2 of oscilloscope.
3. With 4 channels simultaneously in recording mode, observe oscilloscope ch-1 waveform (frequency).
4. Adjust external oscillator so that ch-2 waveform (frequency) is the same as ch-1. See note 2 .
5. Select front (ch-1 & ch-3) only and back (ch-2 & ch-4) only recording modes of RTU-11. Adjust so that oscilloscope ch-1 waveform (frequency) becomes the same as the oscilloscope waveform (frequency) during both front and back recording modes.
   L305: Oscillation frequency during back only recording adjustment point.
   L306: Oscillation frequency during front only recording adjustment point.

NOTE 2:
Oscillation frequency is approximately 125 kHz.

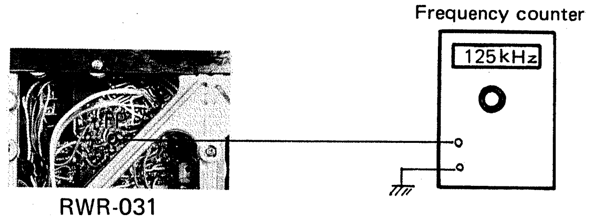


Fig. 25-A

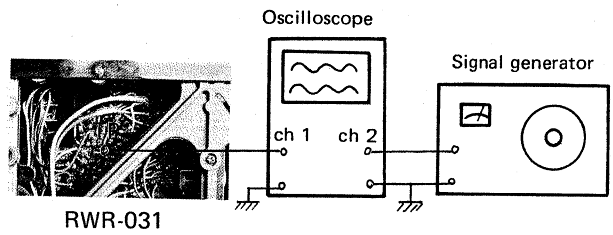


Fig. 25-B

21.5 BIAS TRAP (Fig. 26)

1. Set for 4 channel simultaneous recording mode.
2. Connect oscilloscope to terminal 37 (38, 39, 40) on sync amp ass'y (RWF-052) and adjust for minimum bias leakage (smallest waveform).

			Test terminal	Adjustment location
FRONT	L	ch. 1	37	L_{304}
	R	ch. 3	38	L_{303}
BACK	L	ch. 2	39	L_{302}
	R	ch. 4	40	L_{301}

Set to less than 1Vp-p

21.6 BIAS VOLTAGE VARIABLE RANGE (Fig. 28)

1. Set for 4 channel simultaneous recording mode.
2. Set BIAS switch to LOW or HIGH position.
3. Connect VTVM between TP on power supply & O.S.C ass'y (RWR-031) and ground.
4. When BIAS control is turned from MIN to MAX, confirm that VTVM indication varies in the range of 18.5V to more than 25V.

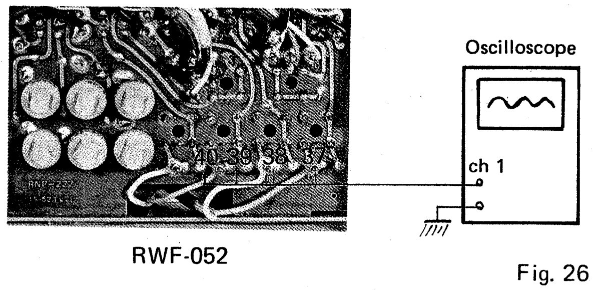


Fig. 26

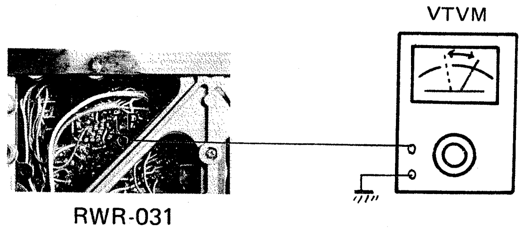


Fig. 27

21.7 RECORDING BIAS (Fig. 29)

1. Set for 4 (2) channel simultaneous recording mode.
2. Set BIAS switch to FIX position.
3. Apply 1 kHz/−20 dBv (100mV) signal to INPUT REC jacks and run tape.
4. Adjust so that after passing peak, each channel output at OUTPUT PLAY jacks (39 k ohms load) becomes −0.3dB, as shown in Fig. 28.

NOTE:
Since VR301 & VR302 and VR303 — VR306 interact, repeat adjustments several times to obtain correct setting.

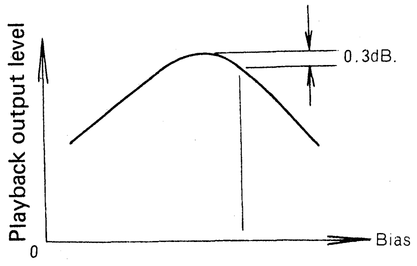


Fig. 28

Head unit Channel			JT-2022T	JT-2044T
FRONT	L	ch. 1	VR_{301}	VR_{303}
	R	ch. 3	VR_{302}	VR_{304}
BACK	L	ch. 2		VR_{305}
	R	ch. 4		VR_{306}

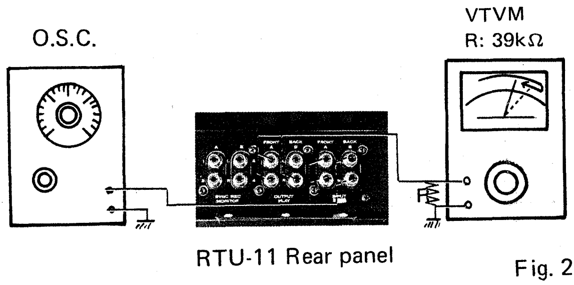


Fig. 29

21.8 RECORDING LEVEL (Fig. 30)

1. After completing Bias Adjustment (21.7), apply 1 kHz/−20dB signal to each INPUT REC jack and perform simultaneous recording and playback.
2. Adjust for −20 dBv (100mV) output on each channel at the OUTPUT PLAY jacks (39 k ohms load) by using the adjustment points listed figure below.

Head unit Channel			JT-2022T	JT-2044T
FRONT	L	ch. 1	VR_{101}	VR_{103}
	R	ch. 3	VR_{102}	VR_{104}
BACK	L	ch. 2		VR_{105}
	R	ch. 4		VR_{106}

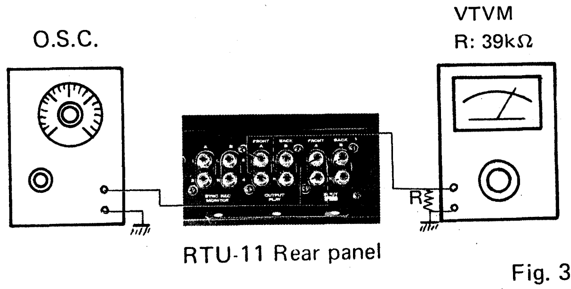


Fig. 30

21.9 OVERALL FREQUENCY RESPONSE CHECK (Fig. 32)

1. Set BIAS switch to FIX position.
2. Apply 1 kHz/−40 dBv (10mV) and 15 kHz/−40 dBv (10mV) signals to INPUT REC jacks of each channel and record each signal for several seconds (use tape STD-502 for recording).
   *See note
3. Rewind and play back tape.
4. Confirm that 15 kHz playback level is within the range of ±2dB with respect to 1 kHz playback level for each channel at the OUTPUT PLAY jacks (39 k ohms internal load).
5. If not within this range, repeat 21.7 Recording Bias and 21.8 Recording Level adjustments. In this case, be sure to maintain bias in the range −0.3dB ± 0.2dB.
6. If after repeating steps 21.7 and 21.8, difference between the two frequency levels exceeds ±2dB, readjustment of head azimuth, recording equalization, etc. will be necessary.

NOTE:
When performed simultaneous recording and playback, correct output level cannot be obtained due to bias leakage. Be sure to perform in the sequence record—rewind—playback.

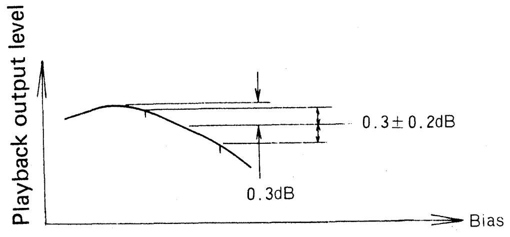


Fig. 31

Peaking frequencies (for reference):

Tape speed Tape type	19cm	38cm
STD	25kHz	32kHz
LH	26kHz	42kHz

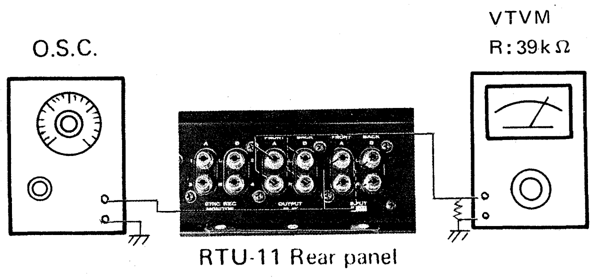


Fig. 32

21.10 TEST OSCILLATOR OUTPUT VOLTAGE

Set TEST OSC switch to 1 kHz position and adjust for −10 dBv (316mV) output at OSC OUT jack (standard plug). Load resistance at this time is 47k ohms to 51k ohms.
Location: VR601 on test osc ass'y (RWA-024)

21.11 TEST OSC 1 kHz/10 kHz LEVEL DIFFERENCE

Set TEST OSC switch to 10 kHz and adjust for same output (−10 dBv/316mV) as for 1 kHz.
Location: VR602 on test osc ass'y (RWA-024)
Load resistance is also 47 k ohms to 51 k ohms.

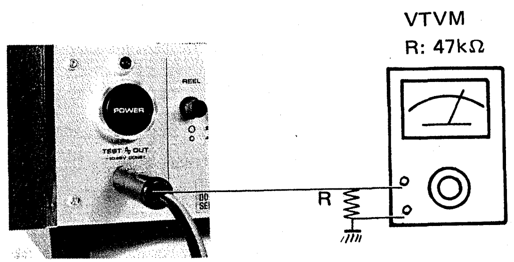


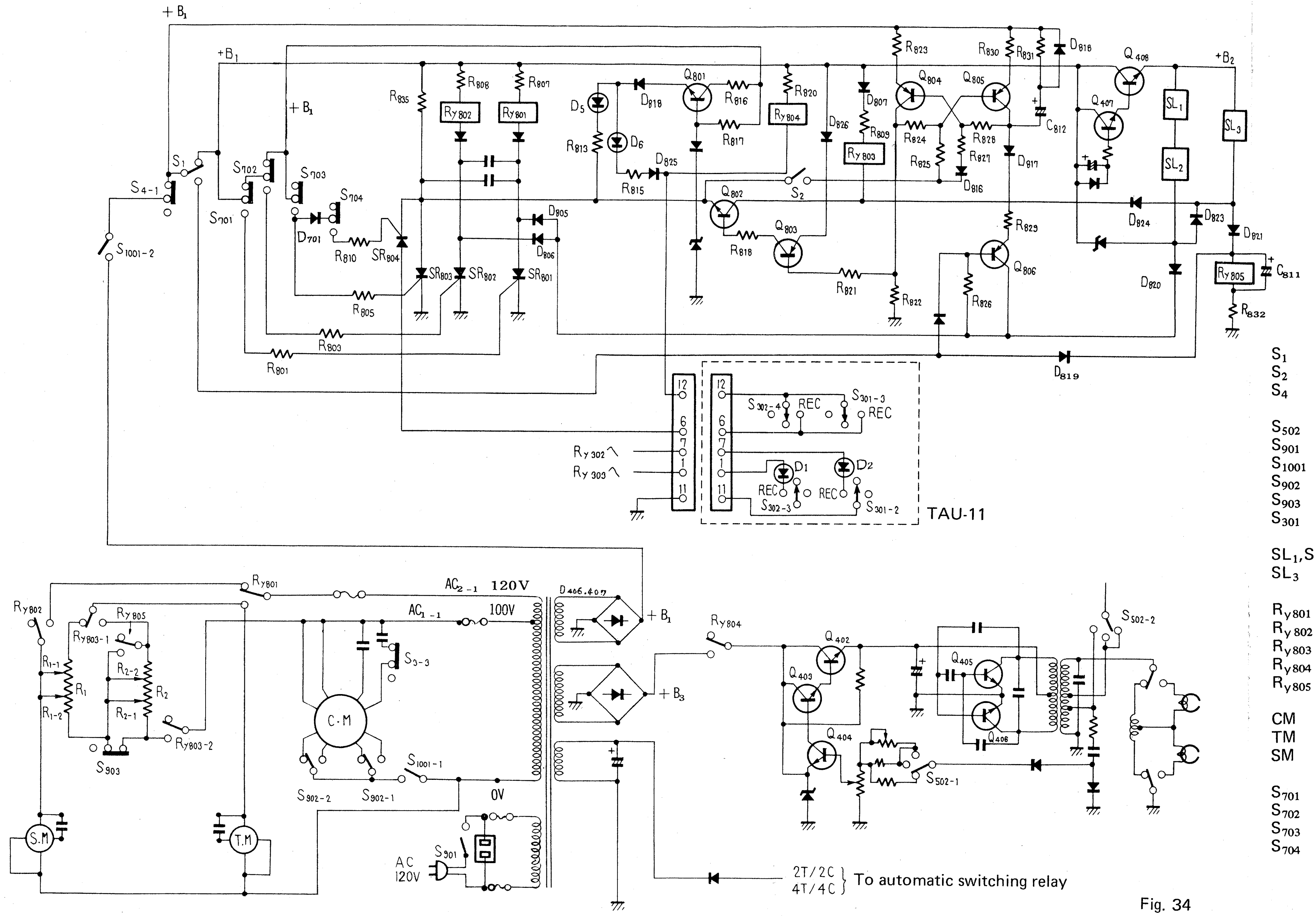
Fig. 33

23.1 POWER SUPPLY ON

With tape installed and POWER switch (S901) set to ON, and since the shut-off switch (S1001) is also ON, voltage (100V) will be supplied to capstan motor (CM) causing it to rotate. From rectifiers (D406 & D407) in the power transformer secondary, +B1 is applied to Q408 by the route S1001-2 — S4-1 — S1. +B2 from Q408 emitter then flows by the route SL3 — D821 — Ry805 — R832, causing Ry805 to operate.

Even though current flows in Ry805 via SL3, SL3 does not operate at this time. This is because Ry805 itself becomes SL3 load and the current amount is low at approximately 15 mA. SL3 operating current is approximately 400 mA.

Ry805 operation shorts R2-2 to regulate take-up motor (TM) torque when play operation starts. Also, C811 in parallel with Ry805 becomes charged. In such repetitive operations as pressing the STOP BUTTON, the PLAY button, and again the STOP button, C811 charging route becomes S1 — D819 — C811 — R832. Since STOP-PLAY repetition can be instantaneous, in order to always provide proper torque during play, it is necessary to charge C811 by this route as the STOP button is pressed.


+B1
+B2
+B3
S1
S2
S4-1
S1001-1
S1001-2
S701
S702
S703
S704
D701
R801
R803
R805
R810
R813
R815
R816
R817
R818
R820
R821
R822
R823
R824
R825
R826
R827
R828
R829
R830
R831
R832
R835
R806
R807
R809
Ry801
Ry802
Ry803
Ry804
Ry805
Ry803-1
Ry803-2
SR801
SR802
SR803
SR804
D5
D6
D1
D2
D805
D806
D807
D816
D817
D818
D819
D820
D821
D823
D824
D825
D826
Q801
Q802
Q803
Q804
Q805
Q806
Q402
Q403
Q404
Q405
Q406
Q407
Q408
C811
C812
SL1
SL2
SL3
12
6
7
1
11
S302-4
S302-3
S301-3
S301-2
REC
Ry302
Ry303
TAU-11
R1-1
R1-2
R1
R2-2
R2-1
R2
S903
S.M
T.M
C·M
S3-3
S902-2
S902-1
S901
AC2-1 120V
AC1-1 100V
0V
AC 120V
D406.407
S502-1
S502-2
2T/2C
4T/4C
To automatic switching relay

S_1	STOP SWITCH
S_2	PAUSE SWITCH (OFF)
S_4	REMOTE CONTROL SWITCH (NORMAL)
S_{502}	BIAS SWITCH (FIX)
S_{901}	POWER SWITCH
S_{1001}	SHUT OFF SWITCH
S_{902}	SPEED SWITCH (38 cm/sec)
S_{903}	REEL SWITCH (10 in)
S_{301}	REC MODE SWITCH
SL_1,SL_2	BLAKE SOLENOID
SL_3	PINCH SOLENOID
R_{y801}	FF relay
R_{y802}	REW relay
R_{y803}	PLAY (REC) relay
R_{y804}	REC relay
R_{y805}	Torque relay
CM	Capstan motor
TM	Take up motor
SM	Supply motor
S_{701}	FF SWITCH
S_{702}	REW SWITCH
S_{703}	PLAY SWITCH
S_{704}	REC SWITCH

Fig. 34

23.2 PLAY OPERATION

Pressing the PLAY button (S703) applies +B1 to SR803 gate by the route S1 — S702 — S703 — R805, switching SR803 ON. +B1 from S1 then flows in the route D807 — R809 — Ry803 — Q802 — SR803, holding PLAY relay Ry803. Play operation begins at this time.

With SR803 ON, Q802 emitter* approaches ground potential. +B2 flows in the route SL3 — D824 — Q802 — SR803. SL3 operates and pinch roller contacts the capstan.

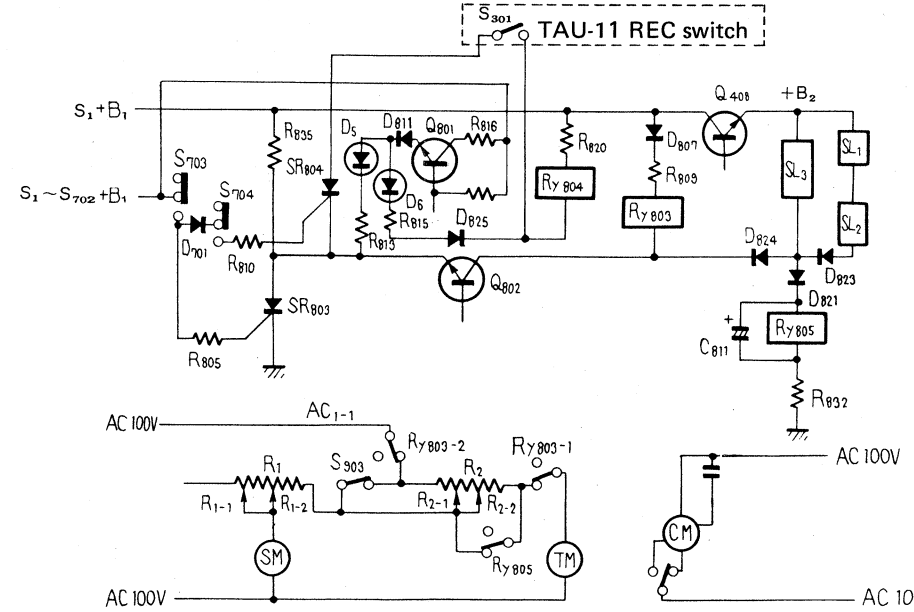
* Since Q804 is OFF, Q803 is forward biased ON by the path R821 — R822. +B2 is then applied as forward bias to Q802 by the route D826 — Q803 — R818. (Fig. 34. See page 142.)

As SL3 operates, some Ry805 current flows in the route D824 — Q802 — R803, and the current through Ry805 resets after being held for approximately 1 second by the charge on C811.

Take-up reel motor (TM) starts to rotate with Ry803 operation, since AC current AC1-1 flows in the route Ry803-2 — S903 — Ry805-(R2-2) — Ry803-1 (see note 1). In the same manner, AC current AC1-1 is applied in the route Ry803-2 — S903 — R1-2 to operate the supply reel motor (SM). Brake release of TM and SM is performed by brake solenoid operation with +B2 flowing in the route SL1 — SL2 — D823 — D824 — Q802 — SR803.

The PLAY lamp (D5) lights from +B1 in the route S702 — R816 — Q801 — D811 — D5 — R813 — SR803.

NOTE 1:
SINCE Ry805 resets upon completion of C811 discharge, R2-2 is shorted for only about 1 second when TM drive starts. Afterwards, current is supplied via R2-2.


S301
TAU-11 REC switch
S1+B1
S1~S702+B1
S703
S704
D701
R810
R835
SR804
D5
D811
Q801
R816
D6
R815
R813
D825
R820
Ry804
D807
R809
Ry803
Q408
+B2
SL3
SL1
SL2
D824
D823
D821
Q802
SR803
R805
C811
Ry805
R832
AC 100V
AC1-1
Ry803-2
Ry803-1
R1
S903
R2
R1-1
R1-2
R2-1
R2-2
SM
Ry805
TM
AC 100V
CM
AC 100V

S_{703}	PLAY SWITCH
S_{704}	REC SWITCH
R_{y804}	REC relay
R_{y803}	PLAY (REC) relay
SL_1, SL_2	Brake solenoids
SL_3	Pinch solenoid
R_{y805}	Torque up relay
D_5	PLAY lamp
D_6	REC lamp
SM	Supply motor
TM	Take up motor
CM	Capstan motor

Fig. 35

23.3 RECORDING OPERATION

Recording starts when PLAY (S703) and REC (S704) buttons are pressed simultaneously. With buttons pressed, +B1 is applied to SR804 gate in the route S1 — S701 — S702 — S703 — D701 — S704 — R810 and SR804 gates ON. Thus, +B1 flows through R820 — Ry804 — S301 (S302 — SR804 — SR803 to hold REC relay Ry804 (see note 2). Ry804 is energized and sends to the oscillator circuit initiating the recording mode. Pinch roller operation is the same as that described for play operation. (Fig. 34. See page 142)

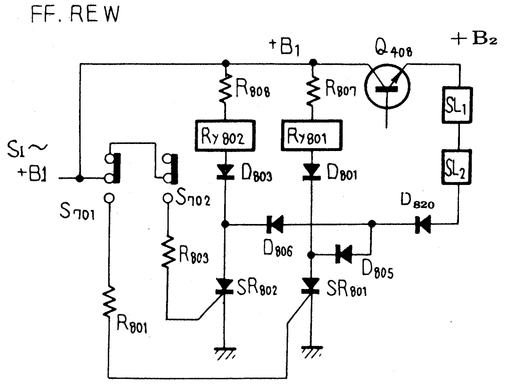
**NOTE 2:*
S301 and S302 operate with TAU-11 REC switch. Setting REC switch to REC position completes current path through Ry804. D1, D2, (TAU-11) light to indicate recording mode. Recording mode is not obtained if switches are in positions other than REC, even when PLAY and REC buttons are pressed.

23.4 FF OPERATION

When the FF button (S701) is pressed, +B1 in the route S1 — S701 — R801 turns ON SR801 gate. +B1 then flows in the path R807 — Ry801 — D801 — SR801 to hold Ry801. AC2-1 (120V) flows from Ry801 contacts to TM, which starts to rotate at high speed. To supply back tension during this time, AC2-1 follows the route Ry801 (contacts) — Ry803-1 — R1-1 — SM to operate the supply reel motor. TM and SM brake solenoids are released by +B2 in the route SL1 — SL2 — D820 — D805 — SR801.

23.5 REW OPERATION

SR802 gates ON when the REW button (S702) is pressed and +B1 applied to its gate by the route S1 — S701 — S702 — R803 — SR802. +B1 then flows in the route R808 — Ry802 — D803 — SR802 to hold Ry802. Ry802 contacts close and AC2-1 (120V) is supplied directly to SM through contacts of Ry801 and Ry802, causing high speed rotation. AC2-1 is applied to TM for back tension through the path Ry801 — Ry802 — R1-1 — R1-1 — Ry803-1 — RM. TM and SM brake solenoids are released by +B2 through the path SL1 — SL2 — D820 D806 — SR802.


FF. REW
+B1
Q408
+B2
R808
R807
Ry802
Ry801
SL1
SL2
S1~
+B1
D803
D801
S701
S702
D820
R803
D806
D805
SR802
SR801
R801

S_{701}	FF SWITCH
S_{702}	REW SWITCH
R_{y802}	REW relay
R_{y801}	FF relay
SL_1 SL_2	Brake solenoids
SM	Supply motor
TM	Take up motor

Fig. 36-a

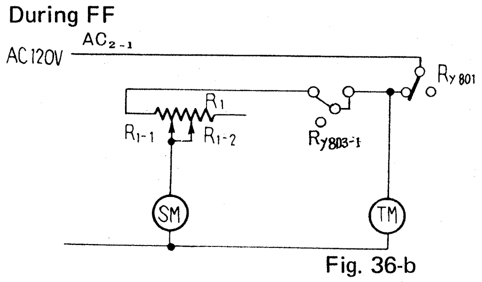

During FF
AC 120V
AC2-1
Ry801
R1
R1-1
R1-2
Ry803-1
SM
TM

Fig. 36-b

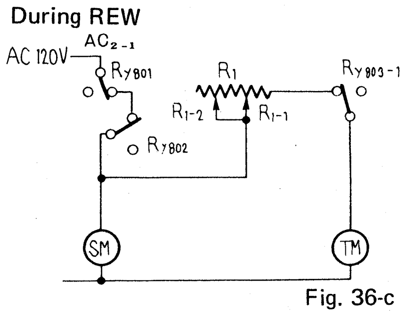

During REW
AC 120V
AC2-1
Ry801
R1
Ry803-1
R1-2
R1-1
Ry802
SM
TM

Fig. 36-c

23.6 TIMING OPERATION

In order to protect tape when switching directly from FF or REW to PLAY (REC), a fixed time lag is provided during which the tape stops. Transistor states during FF are:

ON: Q407, Q408, Q804, Q806
OFF: Q802, Q803, Q805

1. During FF, Q806 is biased through R826 – D805 – SR801 and it switches ON.
2. Q804 switches ON due to bias through R828 – D817 – R829 – Q806.
3. With Q804 ON, the bases of Q803 and Q805, connected to Q804 collector through R821 and R824, become reverse biased, switching them OFF.
4. Q802 loses bias with Q803 OFF and it also turns OFF.
5. C812 (timing capacitor) is charged from +B1 through the path R831 – C812 – D817 – R829 – Q806 – SR801.
6. When PLAY (REC) is switched directly at this point, +B1 becomes applied to SR803, switching it ON (see Play Operation). The two current routes maintaining SR803 in the ON state are +B1 – R835 – SR803 and +B1 – R816 – Q801 – D818 – D5 – R813 (see Fig. 34 on page 142).
7. When SR803 turns on, SR801 is cut off by operation of C805 (bipolar capacitor).
8. Q806 becomes OFF since its bias is absent with SR801 OFF. However, Q804 ON state continues through bias from C812 charge via R828.
9. C812 discharge continues through the route D818 – R823 – Q804 – R828 and as Q804 base current gradually declines, its internal resistance increases. For this reason, the potential difference between collector and emitter of Q804 becomes large. The reverse biased Q803 and Q805 then become forward biased and switch ON.
10. When Q805 turns ON, C812 is rapidly discharged through the path D818 – R830 – Q805 and Q804 becomes OFF.
11. With Q803 ON, Q802 is switched ON by +B1 applied to its base through the route D826 – Q803 – R818.
12. With Q802 ON, +B2 is applied to the pinch solenoid SL3 through the route D824 – Q802 – SR803 and to the brake solenoids SL1 and SL2 through the route D823 – D824 – Q802 – SR803. The solenoids operate to start PLAY (REC) operation.
13. When the PLAY button is suddenly pressed during FF (REW) operation, the time required for play to begin (6 – 7 seconds) is determined by C812 discharge time.

23.7 PAUSE OPERATION

Q804 and Q806 are OFF during PLAY (REC), while Q802, Q803 and Q805 are ON. When PAUSE switch (S2) is set to ON, Q804 becomes ON by forward bias through the route R827 – D816 – S2 – SR803. This reverse biases the base of Q803 to switch it OFF; Q802 also becomes OFF. At this point solenoids SL1 – SL3 and relay Ry803 reset to obtain pause mode. Current flow through the two routes of +B1 – R805 and +B1 – R816 – Q801 – D811 – D5 – R813 (Fig. 34 on page 142) maintains SR803 in the ON state. When the PAUSE switch is set to OFF, Q804 turns OFF due to reverse bias, while Q803 and Q802 become ON to resume tape motion.

23.8 REDUCED SWITCHING TIME THROUGH PAUSE SWITCH OPERATION

The time lag when switching directly from FF (REW) to PLAY (REC) can be shortened by operating the PAUSE switch. This operating method is as follows:

FF (REW) (tape at high speed) → PAUSE switch ON → PLAY (REC) button ON (tape stops) → PAUSE switch OFF (tape motion begins)

The principle of this, as described in Timing Operation, is that during FF (REW) Q804 is ON and Q805 OFF and C812 charges. When FF (REW) operation is stopped, C812 becomes slowly discharged through Q804, then Q805 is switched ON. By rapidly discharging C812, PLAY (REC) operation can be begun immediately. This rapid discharge is provided by the PAUSE switch. The actual circuit operation with respect to the above sequence is as follows:

1. Q804, Q806 and SR801 are ON during FF (REW), while Q802, Q803, Q805 and SR803 are OFF.
2. When PAUSE switch (S2) is set ON and since SR803 is OFF, tape high speed motion continues.
3. SR803 turns ON when the PLAY (REC) button is pressed. SR801 is turned OFF by C805 and tape motion stops.
4. Since PAUSE switch (S2) is already ON, Q805 base is forward biased and it becomes ON.
5. As Q805 is ON, C812 timing capacitor is rapidly discharged.
6. Tape running is attained by setting PAUSE switch (S2) to OFF.

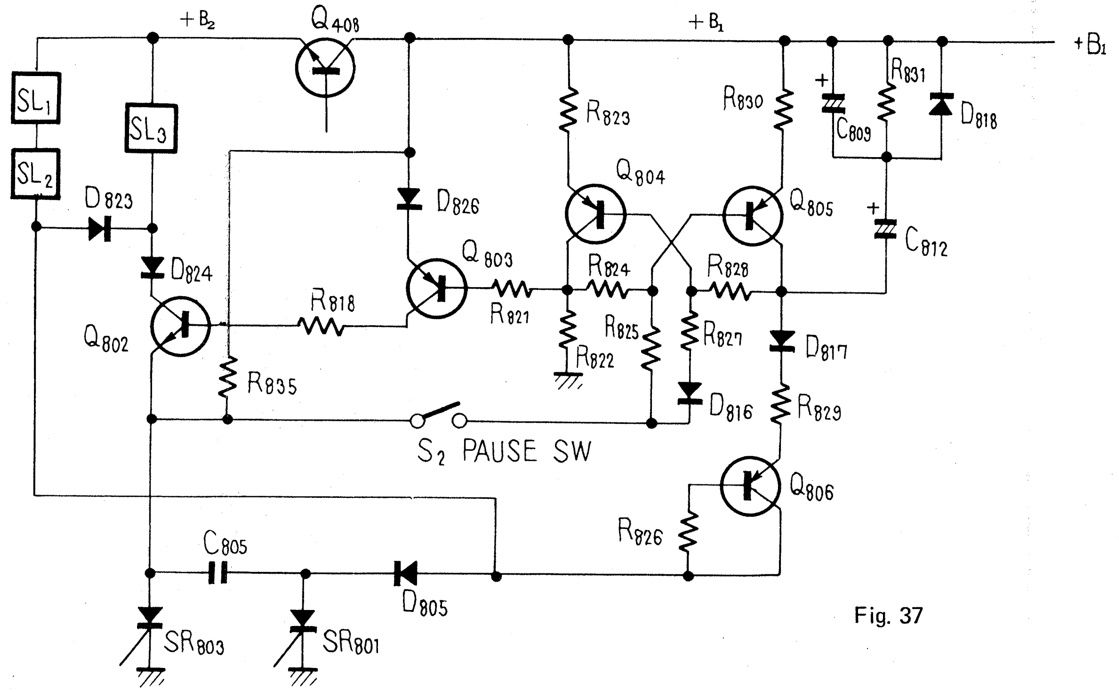
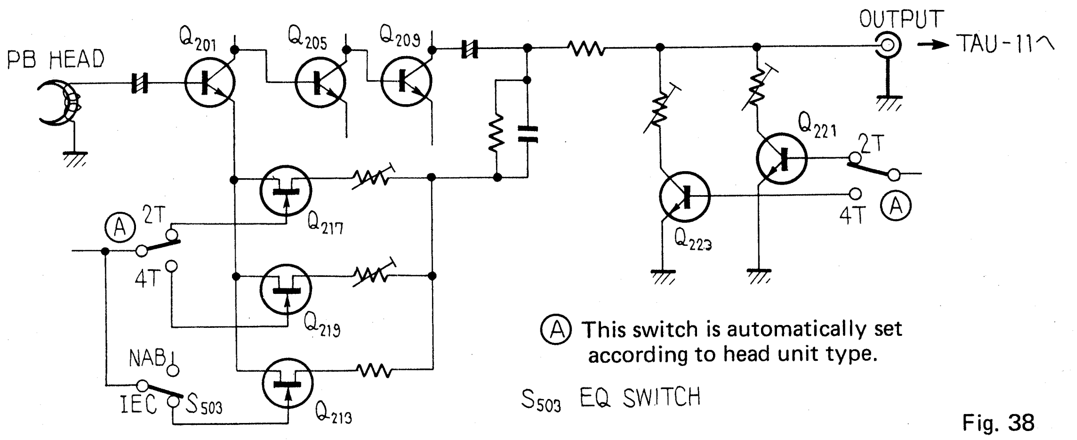


Fig. 37

23.9 PLAYBACK EQUALIZATION AMPLIFIER

This is a 3-stage direct coupled amplifier, containing a feedback circuit from Q209 collector to Q201 emitter. Equalization differs according to head unit (JT-2022T or JT-2044T). At 2T/2C FET Q217 turns ON, while Q219 turns ON at 4T/4C to change the feedback path. Since Q213 is connected in parallel with Q219 and Q217, NAB/IEC selection can be performed with both 2T/2C and 4T/4C. Output level switching is performed by Q221 (2T/2C) and Q223 (4T/4C). Q217, Q219, Q221 and Q223 are automatically switched by simply plugging in the head unit.


PB HEAD
Q201
Q205
Q209
OUTPUT
→ TAU-11へ
Q221
2T
4T
Ⓐ
Q223
Ⓐ
2T
4T
Q217
Q219
NAB
IEC
S503
Q213
S503 EQ SWITCH

Ⓐ This switch is automatically set according to head unit type.

Fig. 38

23.10 RECORDING EQUALIZATION AMPLIFIER

In this 2-stage direct coupled amplifier, low frequencies are equalized by CR feedback, and high frequencies by LC. Input level is automatically set by simply plugging in the head unit (Q101 for 2T/2C and Q103 for 4T/4C).

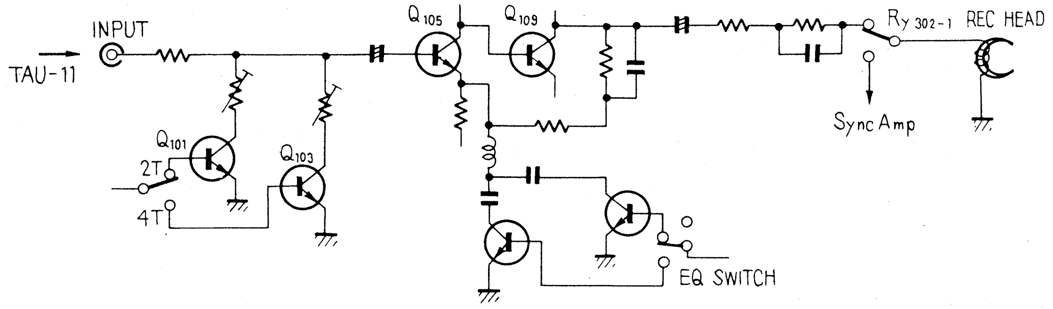

INPUT
TAU-11
Q101
Q103
2T
4T
Q105
Q109
Ry302-1
REC HEAD
Sync Amp
EQ SWITCH

Fig. 39

23.11 TEST OSCILLATOR CIRCUIT

The built-in test oscillator circuit in the RTU-11 is a CR phase shift oscillator. The amplifier composed of Q601 and Q603. Since Q603 is an emitter-follower, Q601 input and Q603 output are in opposite phase. 3-stage CR elements are inserted as a feedback circuit between these two transistors to determine the oscillation frequency. The oscillation voltage produced at this point is rectified to a negative voltage by D601 and C606, and applied to Q602 (FET) gate. As the oscillation voltage increases, Q602 internal impedance increases, decreasing the gain of Q601 and maintaining the oscillation voltage at a fixed level. 1 kHz and 10 kHz selection is performed by a switch which changes the CR constant.

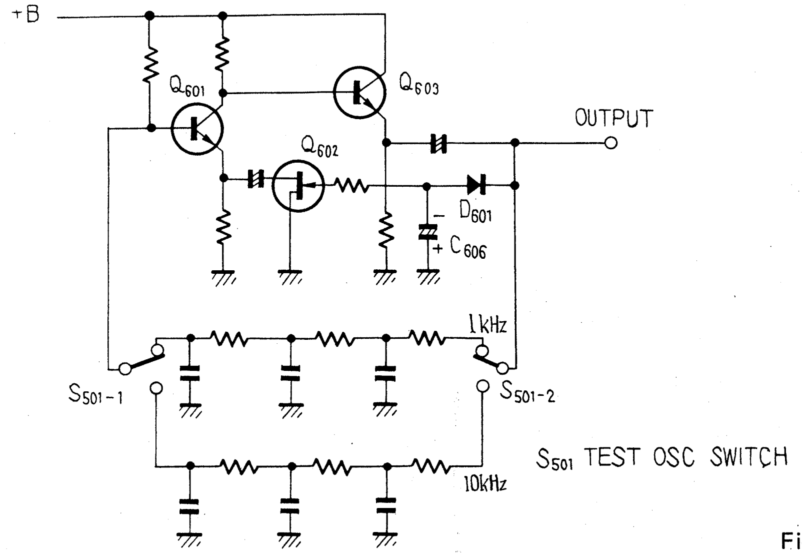

+B
Q601
Q603
Q602
OUTPUT
D601
C606
1kHz
S501-1
S501-2
10kHz
S501 TEST OSC SWITCH

Fig. 40

23.12 SYNC AMP CIRCUIT

The recording signal is played back (synchro-monitor) by the record head (RH) to perform synchronized recording. A special amplifier (sync amp) matching RH characteristics then becomes necessary. As shown in the Fig. 41-a. RH is connected to the bias oscillator during recording and at other times it is connected to the sync amp circuit. The sync amp is a 2-stage direct coupled circuit with response as shown in the graph. Fig. 41-b

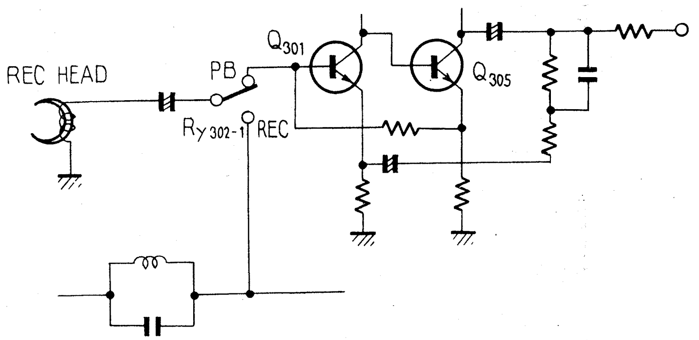

REC HEAD
PB
Ry302-1
REC
Q301
Q305

Fig. 41-a

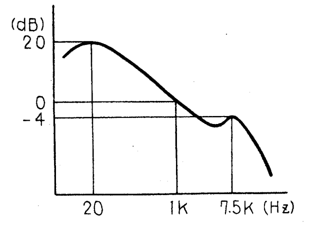
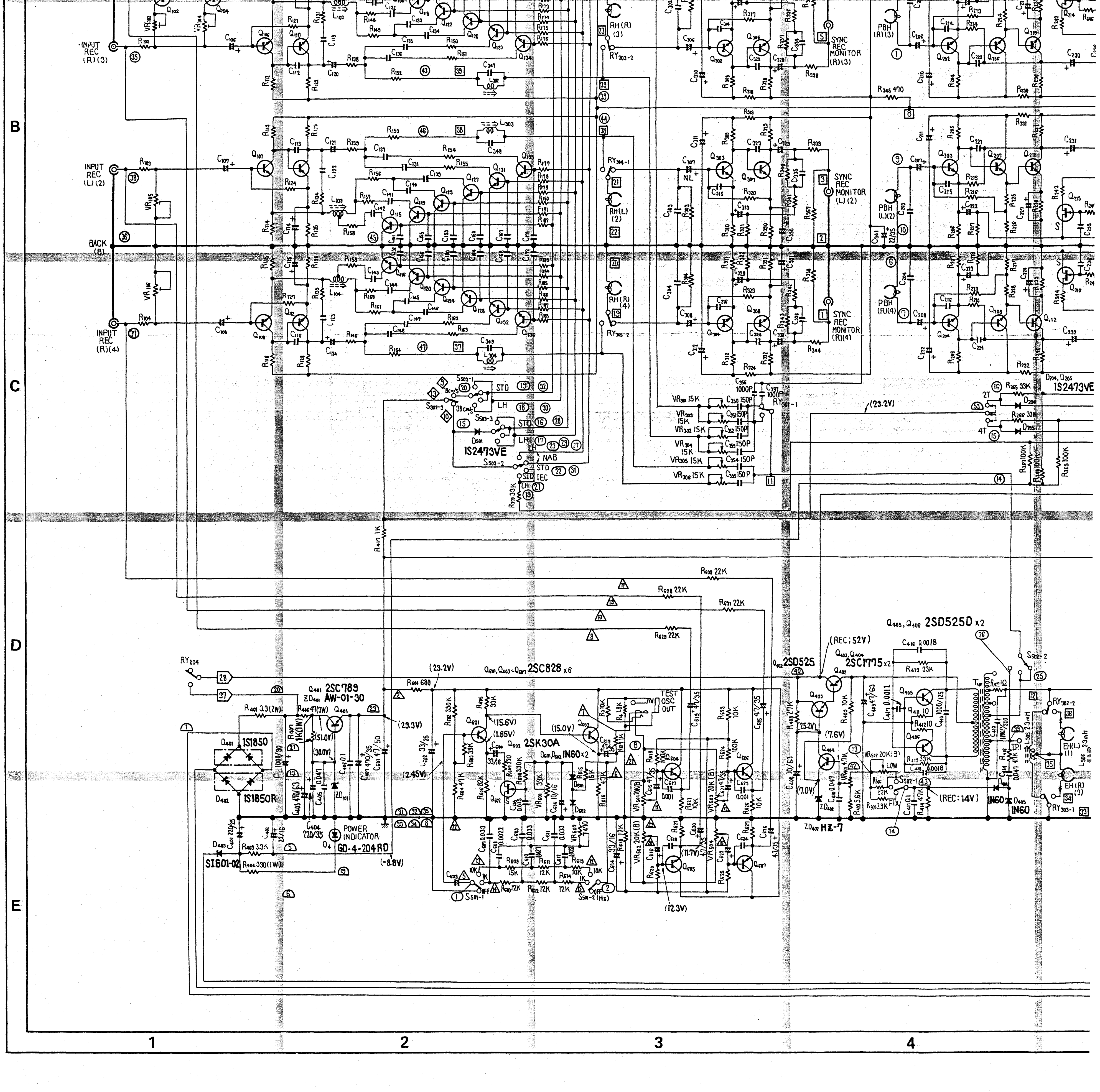


Fig. 41-b

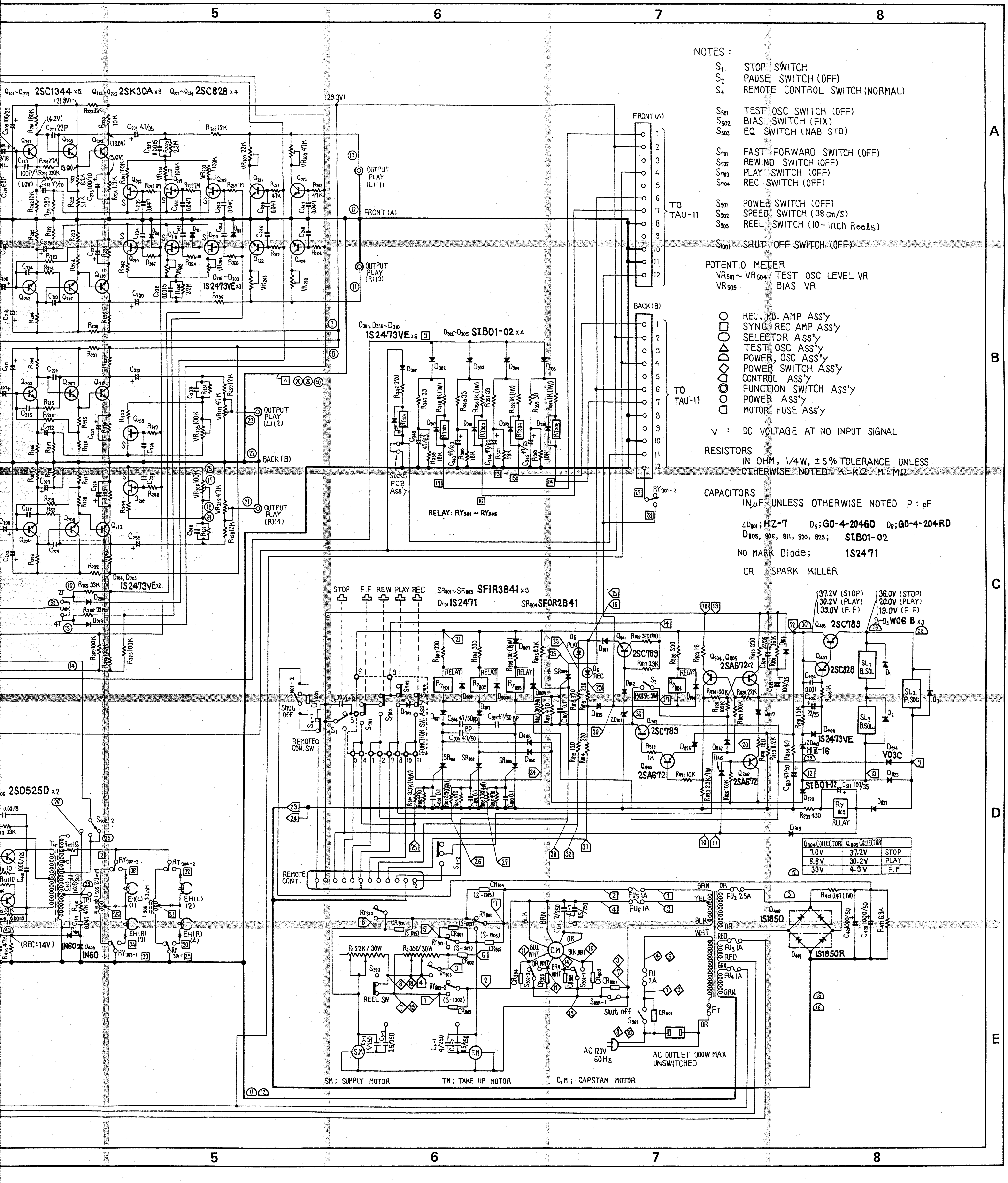
SYSTEM TAPE DECK

RT-2022/RT-2044 KU

TRANSPORT UNIT RTU-11/2T, RTU-11/QT


1
2
3
4
A
B
C
D
E
Q101~Q104 2SC828x4
Q105~Q108 2SC1344 x4
Q109~Q112 2SC1213x4
Q113~Q136 2SC828
INPUT REC (L) (1)
FRONT (A)
INPUT REC (R) (3)
INPUT REC (L) (2)
BACK (B)
INPUT REC (R) (4)
RH (L) (1)
RH (R) (3)
RH (L) (2)
RH (R) (4)
Q301~Q308 2SC1344 x8
SYNC REC MONITOR (L) (1)
SYNC REC MONITOR (R) (3)
SYNC REC MONITOR (L) (2)
SYNC REC MONITOR (R) (4)
Q201~Q212 2SC1344 x12
Q213~Q220 2SK30A
PBH (L) (1)
PBH (R) (3)
PBH (L) (2)
PBH (R) (4)
STD
LH
NAB
IEC
1S2473VE
RY304
D401 1S1850
D402 1S1850R
Q401 2SC789
ZD401 AW-01-30
POWER INDICATOR
D4 GD-4-204RD
D403 SIB01-02
Q601, Q603~Q607 2SC828 x6
Q602 2SK30A
D601, D602 1N60x2
TEST OSC OUT
Q402 2SD525
Q403, Q404 2SC1775x2
Q405, Q406 2SD525D x2
ZD402 HZ-7
1N60
EH (L) (1)
EH (R) (3)
(23.3V)
(23.2V)
(-8.8V)
(12.3V)
(REC ; 52V)
(REC : 14V)

44 KU


5
6
7
8
A
B
C
D
E
Q201~Q212 2SC1344 x12 Q213~Q220 2SK30A x8 Q221~Q224 2SC828 x4
(29.3V)
OUTPUT PLAY (L)(1)
FRONT (A)
OUTPUT PLAY (R)(3)
D201~D203 1S2473VE x3
OUTPUT PLAY (L)(2)
BACK (B)
OUTPUT PLAY (R)(4)
D204, D205 1S2473VE x2
2SD525D x2
EH(L) (1)
EH(L) (2)
EH(R) (3)
EH(R) (4)
(REC: 14V)
1N60
FRONT (A)
TO TAU-11
BACK (B)
TO TAU-11
D301, D306~D310 1S2473VE x6
D302~D305 S1B01-02 x4
Socket PCB Ass'y
RELAY: RY301 ~ RY305
STOP
F.F
REW
PLAY
REC
SR801~SR803 SF1R3B41 x3
D701 1S2471
SR804 SF0R2B41
Shut OFF
REMOTE CON. SW
FUNCTION SW ASS'Y S701~S704
PAUSE SW
2SC789
2SA672 x2
2SA672
2SC828
1S2473VE
HZ-16
V03C
S1B01-02
RELAY
(37.2V (STOP) 30.2V (PLAY) 33.0V (F.F)
(36.0V (STOP) 20.0V (PLAY) 19.0V (F.F)
Q408 2SC789
D1~D3 W06 B x3
SL1 B.SOL
SL2 B.SOL
SL3 P.SOL
REMOTE CONT.
REEL SW
S.M
T.M
C.M
BRN
YEL
BLK
WHT
RED
GRN
OR
FU5 1A
FU6 1A
FU2 2.5A
FU3 1A
FU4 1A
1S1850
1S1850R
Shut off
AC 120V 60Hz
AC OUTLET 300W MAX UNSWITCHED
SM; SUPPLY MOTOR
TM; TAKE UP MOTOR
C.M; CAPSTAN MOTOR

NOTES :

S_1 STOP SWITCH
S_2 PAUSE SWITCH (OFF)
S_4 REMOTE CONTROL SWITCH (NORMAL)

S_{501} TEST OSC SWITCH (OFF)
S_{502} BIAS SWITCH (FIX)
S_{503} EQ SWITCH (NAB STD)

S_{701} FAST FORWARD SWITCH (OFF)
S_{702} REWIND SWITCH (OFF)
S_{703} PLAY SWITCH (OFF)
S_{704} REC SWITCH (OFF)

S_{901} POWER SWITCH (OFF)
S_{902} SPEED SWITCH (38 cm/S)
S_{903} REEL SWITCH (10-inch Reels)

S_{1001} SHUT OFF SWITCH (OFF)

POTENTIO METER
VR_{501}~VR_{504} TEST OSC LEVEL VR
VR_{505} BIAS VR

○ REC, P.B. AMP ASS'Y
□ SYNC REC AMP ASS'Y
⬭ SELECTOR ASS'Y
△ TEST OSC ASS'Y
⌓ POWER, OSC ASS'Y
◇ POWER SWITCH ASS'Y
⊲ CONTROL ASS'Y
◎ FUNCTION SWITCH ASS'Y
○ POWER ASS'Y
⊏ MOTOR FUSE ASS'Y

V : DC VOLTAGE AT NO INPUT SIGNAL

RESISTORS
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED K : KΩ M : MΩ

CAPACITORS
IN μF UNLESS OTHERWISE NOTED P : pF

ZD_{801}; HZ-7 D_5; GD-4-204GD D_6; GD-4-204RD
D_{805}, 806, 811, 820, 823; S1B01-02

NO MARK Diode; 1S2471

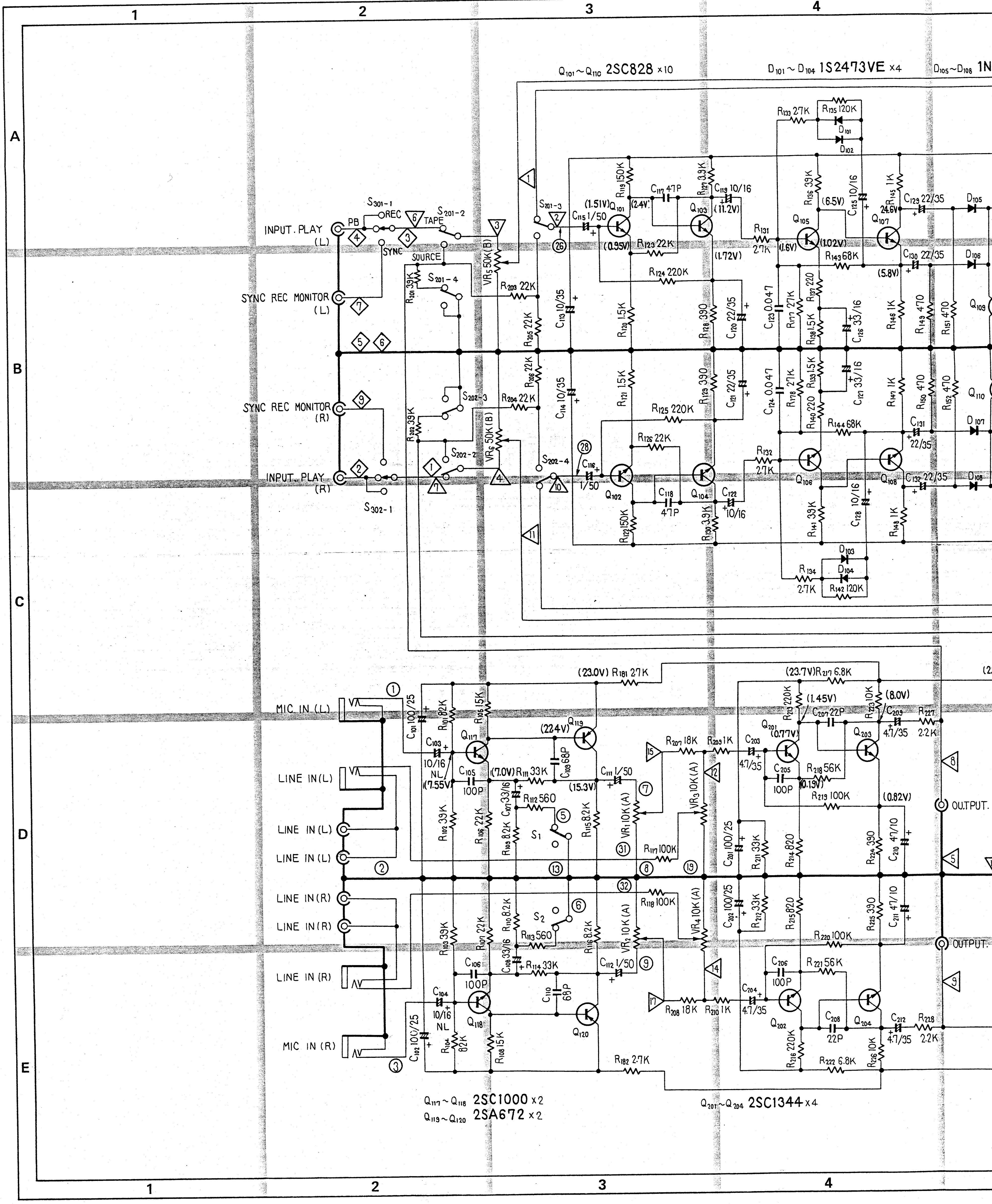
CR SPARK KILLER

Q_{804} COLLECTOR	Q_{805} COLLECTOR	
7.0V	37.2V	STOP
6.6V	30.2V	PLAY
33V	4.3V	F.F

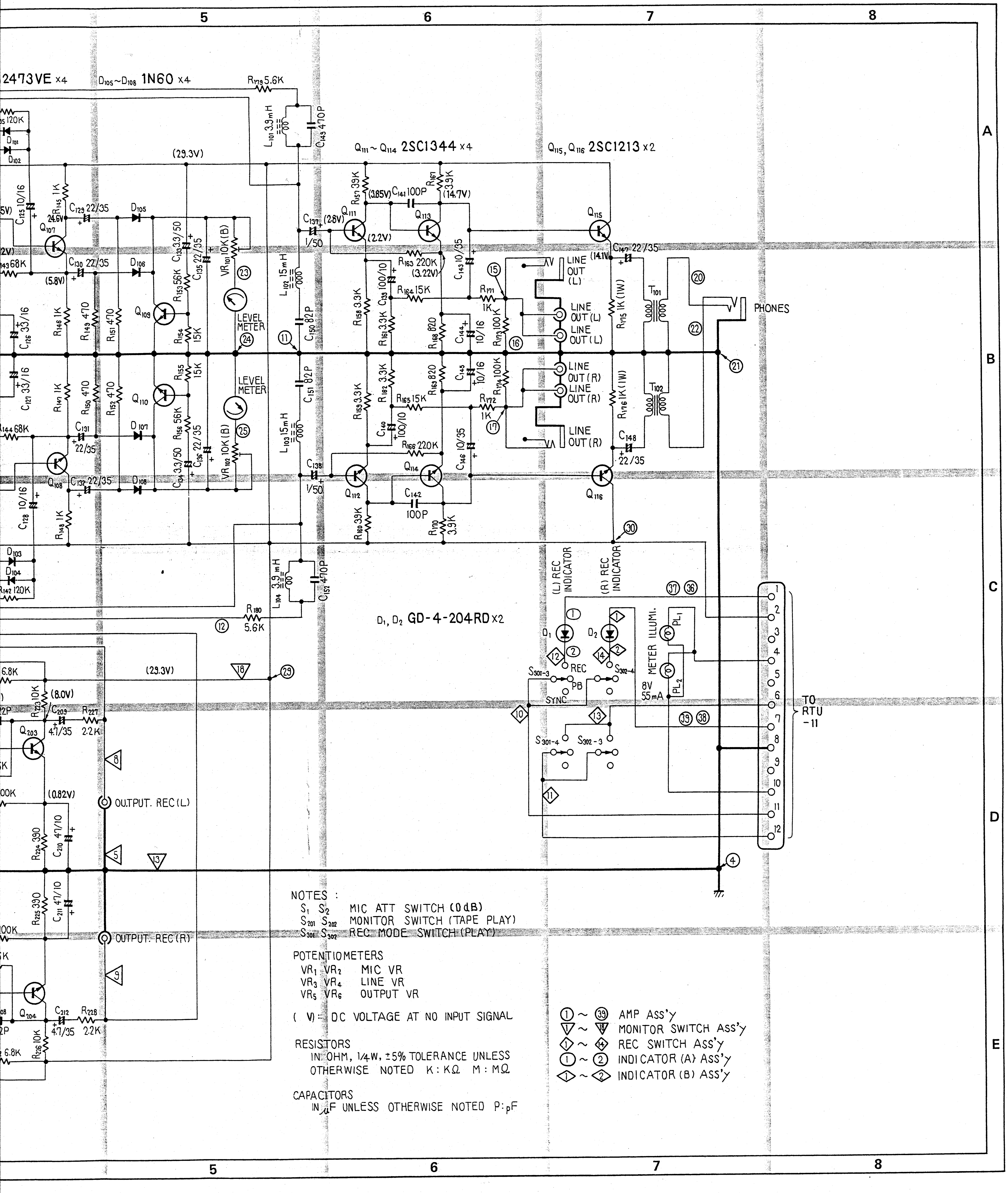
SYSTEM TAPE DECK

RT-2022/RT-2044 KU

AMPLIFIER UNIT TAU-11


1
2
3
4
A
B
C
D
E
Q101~Q110 2SC828 ×10
D101~D104 1S2473VE ×4
D105~D108 1N
INPUT. PLAY (L)
SYNC REC MONITOR (L)
SYNC REC MONITOR (R)
INPUT. PLAY (R)
PB
REC
TAPE
SYNC
SOURCE
S301-1
S201-2
S201-3
S201-4
S202-2
S202-3
S202-4
S302-1
VR5 50K(B)
VR6 50K(B)
Q101
Q102
Q103
Q104
Q105
Q106
Q107
Q108
Q109
Q110
D101
D102
D103
D104
D105
D106
D107
D108
(1.51V)
(2.4V)
(11.2V)
(0.95V)
(1.72V)
(6.5V)
(1.6V)
(1.02V)
24.6V
(5.8V)
MIC IN (L)
LINE IN (L)
LINE IN (L)
LINE IN (L)
LINE IN (R)
LINE IN (R)
LINE IN (R)
MIC IN (R)
Q117
Q118
Q119
Q120
S1
S2
VR1 10K(A)
VR2 10K(A)
VR3 10K(A)
VR4 10K(A)
(224V)
(7.0V)
(7.55V)
(15.3V)
(23.0V)
(23.7V)
(1.45V)
(0.77V)
(8.0V)
(0.15V)
(0.82V)
Q201
Q202
Q203
Q204
OUTPUT.
OUTPUT.
Q117~Q118 2SC1000 ×2
Q119~Q120 2SA672 ×2
Q201~Q204 2SC1344 ×4
1
2
3
4

44 KU



5
6
7
8
A
B
C
D
E
2473VE ×4
D105~D108 1N60 ×4
Q111~Q114 2SC1344 ×4
Q115, Q116 2SC1213 ×2
R179 5.6K
L101 3.9mH
C149 470P
(29.3V)
R145 1K
24.6V
C129 22/35
D105
C133 33/50
C135 22/35
VR101 10K(B)
Q107
R143 68K
C130 22/35
D106
(5.8V)
R146 1K
R149 470
R151 470
Q109
R153 56K
R154 15K
LEVEL METER
C137 (2.8V) 1/50
L102 15mH
C150 82P
C151 82P
L103 15mH
R157 39K
(3.85V)
C141 100P
R171 3.9K
(14.7V)
Q111
Q113
(2.2V)
R163 220K
(3.22V)
C143 10/35
R158 3.3K
C139 100/10
R161 3.3K
R164 15K
R168 820
C144 10/16
R171 1K
R173 100K
Q115
C147 22/35
(14.1V)
LINE OUT (L)
LINE OUT (L)
LINE OUT (L)
LINE OUT (R)
LINE OUT (R)
LINE OUT (R)
R175 1K (1W)
R176 1K (1W)
T101
T102
PHONES
R159 3.3K
R162 3.3K
R165 15K
R169 820
C145 10/16
R174 100K
R172 1K
C140 100/10
R166 220K
C146 10/35
C148 22/35
Q112
Q114
C142 100P
R160 39K
R170 3.9K
Q116
R147 1K
R150 470
R152 470
Q110
R155 15K
R156 56K
C134 33/50
C136 22/35
VR102 10K(B)
R144 68K
C131 22/35
D107
Q108
C132 22/35
D108
C128 10/16
R148 1K
C138 1/50
D103
D104
R142 120K
L104 3.9mH
C152 470P
R180 5.6K
(L) REC INDICATOR
(R) REC INDICATOR
D1, D2 GD-4-204RD ×2
D1
D2
REC
PB
SYNC
S301-3
S302-4
S301-4
S302-3
METER ILLUMI.
PL1
PL2
8V 55mA
TO RTU -11
(23.3V)
6.8K
R223 10K
(8.0V)
C203 4.7/35
R227 2.2K
Q203
(0.82V)
OUTPUT. REC (L)
R224 390
C210 47/10
R225 390
C211 47/10
OUTPUT. REC (R)
Q204
C212 4.7/35
R228 2.2K
R226 10K
6.8K

NOTES :
S1 S2 MIC ATT SWITCH (0dB)
S201 S202 MONITOR SWITCH (TAPE PLAY)
S301 S302 REC MODE SWITCH (PLAY)

POTENTIOMETERS
VR1 VR2 MIC VR
VR3 VR4 LINE VR
VR5 VR6 OUTPUT VR

(V) : DC VOLTAGE AT NO INPUT SIGNAL

RESISTORS
IN OHM, 1/4W, ±5% TOLERANCE UNLESS OTHERWISE NOTED K : KΩ M : MΩ

CAPACITORS
IN μF UNLESS OTHERWISE NOTED P : pF

① ~ ㊴ AMP ASS'Y
▽ ~ ▽ MONITOR SWITCH ASS'Y
◇ ~ ◇ REC SWITCH ASS'Y
① ~ ② INDICATOR (A) ASS'Y
◇ ~ ◇ INDICATOR (B) ASS'Y